http://www.cas.org/legal/infopolicy.html

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=> d his

     (FILE 'HOME' ENTERED AT 14:54:31 ON 04 SEP 2008)

     FILE 'CAPLUS' ENTERED AT 14:54:43 ON 04 SEP 2008

=> s electrophoret? and (composite (s) electrolyte))
UNMATCHED RIGHT PARENTHESIS 'ECTROLYTE))'
The number of right parentheses in a query must be equal to the
number of left parentheses.

=> s electrophoret? and (composite (s) electrolyte)
        108028 ELECTROPHORET?
        377577 COMPOSITE
        222085 COMPOSITES
        430700 COMPOSITE
                  (COMPOSITE OR COMPOSITES)
        277561 ELECTROLYTE
        143499 ELECTROLYTES
        332537 ELECTROLYTE
                  (ELECTROLYTE OR ELECTROLYTES)
          5992 COMPOSITE (S) ELECTROLYTE
L1          36 ELECTROPHORET? AND (COMPOSITE (S) ELECTROLYTE)

=> s l1 and (fuel adj cell)
        445485 FUEL
        176826 FUELS
        499995 FUEL
                  (FUEL OR FUELS)
           293 ADJ
       2447702 CELL
       2109816 CELLS
       3199698 CELL
                  (CELL OR CELLS)
             0 FUEL ADJ CELL
                  (FUEL(W)ADJ(W)CELL)
L2           0 L1 AND (FUEL ADJ CELL)

=> d l1 1-36 ibib it abs

L1   ANSWER 1 OF 36  CAPLUS  COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER:        2008:637627  CAPLUS <<LOGINID::20080904>>
TITLE:                   Progress in the key technologies for the fabrication
                         of high specific capacitance of aluminum electrolytic
                         capacitors
AUTHOR(S):               Liang, Xiamei; Tie, Shaolong
CORPORATE SOURCE:        Department of Chemistry and Environment, South China
                         Normal University, Guangzhou, 510006, Peop. Rep. China
SOURCE:                  Keji Daobao (2008), 26(7), 78-83
                         CODEN: KDEAAH; ISSN: 1000-7857
PUBLISHER:               Keji Daobaoshe
DOCUMENT TYPE:           Journal
LANGUAGE:                Chinese
AB   The worldwide market for aluminum electrolytic capacitors (Al E-caps) was
     about USD 4.805 billion in 2004, among which the production in China took
     approx. 40%.  Besides, the Al E-cap market in China continues to grow by
     over 15% per yr due to the increased demands from IC and ISI devices.
     This paper carries out a brief survey on the key technologies for the
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fabrication of high specific capacitance of Al E-caps. The recent development in both composite alumina films with high dielec. constant and working electrolytes for Al E -caps is discussed in detail, including related technol. difficulties and problems. Three different methods to manufacture alumina composite films with high dielec. consts., the sol-gel coating, hydrolysis precipitation and electrophoretic precipitation, are reviewed. Commonly-used solvents, solutes and additives in the working electrolyte for Al E-caps and their performances are analyzed in this paper. Solid electrolytes, including organic semiconductive electrolytes 7,7,8,8-tetracyanoquinodimethan (TCNQ) and its complex salts, and conducting polymers, such as polypyrrole, polyaniline and poly (3,4-ethylenedioxytiophene) are compared. Some ionic liqs., a new type of electrolyte applied for V-chip Al E-caps, are also discussed. The future trends on high specific capacitance of Al E-cap are proposed.

L1 ANSWER 2 OF 36 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2007:1278485 CAPLUS <<LOGINID::20080904>>
DOCUMENT NUMBER: 147:491787
TITLE: Electrolyte solution and method for electrolytic co-deposition of thin film calcium phosphate and drug composites on substrates such as implantable medical devices
INVENTOR(S): Liu, Dean-Mo; Lien, Mao-Jung Maurice; Smith, Doug; Tsui, Manus; Rajtar, Arc
PATENT ASSIGNEE(S): MIV Therapeutics Inc., Can.
SOURCE: PCT Int. Appl., 23pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| WO 2007124572 | A1 | 20071108 | WO 2007-CA707 | 20070426 |
| W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW | | | | |
| RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM | | | | |

PRIORITY APPLN. INFO.: US 2006-795174P P 20060427

IT Prosthetic materials and Prosthetics
(composites, implants; electrolyte solution and method for electrolytic co-deposition of thin film calcium phosphate and drug composites)

IT Ceramics
Coating materials
Coating process
Electrodeposition
Electrolysis
Electrolytes
Encapsulation
(electrolyte solution and method for electrolytic co-deposition

of thin film calcium phosphate and drug composites)
IT Metals, biological studies
Polymers, biological studies
RL: TEM (Technical or engineered material use); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(electrolyte solution and method for electrolytic co-deposition of thin film calcium phosphate and drug composites)
IT 57-55-6, Propylene glycol, processes 59-26-7, N,N-Diethylnicotinamide 64-17-5, Ethanol, processes 67-56-1, Methanol, processes 67-68-5, Dimethyl sulfoxide, processes 68-12-2, DMF, processes 107-21-1, Ethylene glycol, processes 109-99-9, THF, processes 127-19-5, DMA 1314-56-3, Phosphorus pentoxide, processes 7440-70-2D, Calcium, salt 7632-05-5, Sodium phosphate 7664-38-2, Phosphoric acid, processes 7783-28-0, Ammonium hydrogen phosphate 14265-44-2D, Phosphate, salt 16068-46-5, Potassium phosphate 25265-75-2, Butylene glycol 62309-51-7, Propanol
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(electrolyte solution and method for electrolytic co-deposition of thin film calcium phosphate and drug composites)
IT 1306-06-5, Hydroxyapatite 10103-46-5, Dynafos
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(electrolyte solution and method for electrolytic co-deposition of thin film calcium phosphate and drug composites)
IT 299-28-5, Calcium gluconate 814-80-2, Calcium lactate 10043-52-4, Calcium chloride, biological studies 10124-37-5, Calcium nitrate
RL: PEP (Physical, engineering or chemical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(electrolyte solution and method for electrolytic co-deposition of thin film calcium phosphate and drug composites)
AB Disclosed herein are electrolyte solns. and methods for electrolytic co-deposition of calcium phosphate and drug composites. The electrolyte solution may be formed by mixing solns. comprising calcium and phosphate precursors together to form an electrolyte solution The electrolyte solution can have a water content less than 30 weight%. The electrolyte solution may comprise a water-soluble non-aqueous solvent. A therapeutic agent, such as water-insol. drug, is also present in the solution The electrolyte solution thus formed may be used to co-deposit a calcium phosphate coating and the therapeutic agent on a substrate. One method includes the steps of immersing the substrate in the electrolyte solution and applying an elec. potential to the substrate to thereby cause (i) the calcium and phosphate precursors to electrochem. react with hydroxyl groups on the surface of the substrate and deposit the calcium phosphate coating thereon; and (ii) the therapeutic agent to electrophoretically migrate to the substrate and become co-deposited thereon together with the calcium phosphate coating. The method thus provides a convenient and easily controllable means for depositing thin film calcium phosphate and drug composites on substrates such as implantable medical devices.
REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 3 OF 36 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2007:824078 CAPLUS <<LOGINID::20080904>>
DOCUMENT NUMBER: 147:282532
TITLE: Method for preparing carbon nanotube-metal composite film structure by electrophoretic deposition combined with electrochemical plating
INVENTOR(S): Zhang, Yafei; Xu, Dong; Liu, Ping; Wu, Jiahao

PATENT ASSIGNEE(S): Shanghai Jiao Tong University, Peop. Rep. China
SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, 7pp.
CODEN: CNXXEV
DOCUMENT TYPE: Patent
LANGUAGE: Chinese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| CN 101003909 | A | 20070725 | CN 2006-10147648 | 20061221 |

PRIORITY APPLN. INFO.: CN 2006-10147648 20061221

IT Nanotubes
(carbon; method for preparing carbon nanotube-metal composite film structure by electrophoretic deposition combined with electrochem. plating)

IT Alcohols, uses
Ketones, uses
RL: NUU (Other use, unclassified); USES (Uses)
(dispersant; method for preparing carbon nanotube-metal composite film structure by electrophoretic deposition combined with electrochem. plating)

IT Composites
Electrophoretic deposition
Glass substrates
(method for preparing carbon nanotube-metal composite film structure by electrophoretic deposition combined with electrochem. plating)

IT 7786-30-3, Magnesium chloride, uses 10377-60-3, Magnesium nitrate
RL: NUU (Other use, unclassified); USES (Uses)
(electrolyte; method for preparing carbon nanotube-metal composite film structure by electrophoretic deposition combined with electrochem. plating)

IT 7440-02-0, Nickel, uses 7440-22-4, Silver, uses 7440-31-5, Tin, uses 7440-50-8, Copper, uses 7440-57-5, Gold, uses 7440-66-6, Zinc, uses 12062-87-2, FeNi
RL: TEM (Technical or engineered material use); USES (Uses)
(method for preparing carbon nanotube-metal composite film structure by electrophoretic deposition combined with electrochem. plating)

IT 7440-21-3, Silicon, uses
RL: NUU (Other use, unclassified); USES (Uses)
(substrate; method for preparing carbon nanotube-metal composite film structure by electrophoretic deposition combined with electrochem. plating)

AB The title method for preparing carbon nanotube-metal composite film structure comprises purifying, cutting and dispersing single-wall or multi-wall carbon nanotubes; preparing stable dispersed electrophoretic solution containing 0.05-1% of the carbon nanotubes, electrophoretic dispersant (such as ketone or alc.), and 0.05-1% of charge additive salt (such as magnesium nitrate or magnesium chloride); applying voltage to electrodes; carrying out electrophoretic deposition with an elec. field strength of 5-20 V/cm for 3-10 min to obtain uniform carbon nanotube film on a substrate; placing into an electroplating solution; and electrochem. plating with a c.d. of 0.2-2 A/dm2 for 2-5 min to form metal (such as Ni, Cu, Ag, Au, Zn, Sn, Fe or FeNi) conductive film in microstructures between carbon nanotubes. With the method, contact resistance between metal and carbon nanotubes is reduced, and bonding strength between carbon nanotubes and the conductive substrate is increased.

L1 ANSWER 4 OF 36 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2007:247275 CAPLUS <<LOGINID::20080904>>

DOCUMENT NUMBER: 146:388950
TITLE: Preparation of ceramic films by liquid phase processing based on electric and electrostatic interaction of nanoparticles
AUTHOR(S): Kieda, Nobuo; Uchikoshi, Tetsuo; Matsuda, Atsunori
CORPORATE SOURCE: Dep. Mater. Eng., Shonan Institute of Technology, Fujisawa, 251-8511, Japan
SOURCE: Seramikkusu (2007), 42(2), 104-108
CODEN: SERAA7; ISSN: 0009-031X
PUBLISHER: Nippon Seramikkusu Kyokai
DOCUMENT TYPE: Journal; General Review
LANGUAGE: Japanese
IT Films
(ceramic; preparation of ceramic films by liquid phase processing based on elec. and electrostatic interaction of nanoparticles)
IT Ceramics
(films; preparation of ceramic films by liquid phase processing based on elec.
and electrostatic interaction of nanoparticles)
IT Capsules
(hollow, inorg.-organic composite, formed by alternate deposition; preparation
of ceramic films by liquid phase processing based on elec. and electrostatic interaction of nanoparticles)
IT Electrodeposition
Electrodeposits
Electrophoretic deposition
Electrostatic deposition
Nanoparticles
(preparation of ceramic films by liquid phase processing based on elec. and electrostatic interaction of nanoparticles)
AB A review on particle accumulation by elec. field and fixation by electrodeposits, formation of aligned films by using elec. field and magnetic field, and inorg.-organic composite hollow capsules by alternate deposition of oxide nanoparticles and polymer electrolytes.

L1 ANSWER 5 OF 36 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2007:183911 CAPLUS <<LOGINID::20080904>>
DOCUMENT NUMBER: 147:280678
TITLE: Fabrication of catalyst layers in inorganic-organic composite membranes by electrophoretic deposition
AUTHOR(S): Munakata, Hirokazu; Nowatari, Yuko; Ishida, Tomohiko; Kanamura, Kiyoshi
CORPORATE SOURCE: Dep. of Applied Chemistry , Grad. Sch. of Urban Environmental Science, Tokyo Metropolitan Univ., 1-1 Minami-Ohsawa, Hachioji, Tokyo, 192-0397, Japan
SOURCE: Electrochemistry (Tokyo, Japan) (2007), 75(2), 115-118
CODEN: EECTFA; ISSN: 1344-3542
PUBLISHER: Electrochemical Society of Japan
DOCUMENT TYPE: Journal
LANGUAGE: English
IT Polyoxyalkylenes, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(fluorine- and sulfo-containing, ionomers; fabrication of catalyst layers in inorg. organic composite membranes by electrophoretic deposition)
IT Fuel cells
(polymer electrolyte; fabrication of catalyst layers in inorg. organic composite membranes by electrophoretic

deposition)
IT Fluoropolymers, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(polyoxyalkylene-, sulfo-containing, ionomers; fabrication of catalyst layers in inorg. organic composite membranes by electrophoretic deposition)
IT Ionomers
RL: TEM (Technical or engineered material use); USES (Uses)
(polyoxyalkylenes, fluorine- and sulfo-containing; fabrication of catalyst layers in inorg. organic composite membranes by electrophoretic deposition)
IT 7440-06-4, Platinum, uses 7440-44-0, Carbon, uses 7727-54-0, Ammonium persulfate
RL: CAT (Catalyst use); USES (Uses)
(fabrication of catalyst layers in inorg. organic composite membranes by electrophoretic deposition)
IT 7732-18-5, Water, uses
RL: NUU (Other use, unclassified); USES (Uses)
(fabrication of catalyst layers in inorg. organic composite membranes by electrophoretic deposition)
IT 110-26-9, N,N'-Methylenebisacrylamide 1333-74-0, Hydrogen, reactions 7782-44-7, Oxygen, reactions 15214-89-8, 2-Acrylamido-2-methylpropane sulfonic acid
RL: RCT (Reactant); RACT (Reactant or reagent)
(fabrication of catalyst layers in inorg. organic composite membranes by electrophoretic deposition)
IT 69824-22-2, 2-Acrylamido-2-methylpropane sulfonic acid-N,N'-Methylenebisacrylamide copolymer
RL: TEM (Technical or engineered material use); USES (Uses)
(fabrication of catalyst layers in inorg. organic composite membranes by electrophoretic deposition)
IT 7631-86-9, Silica, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(ordered macroporous matrix; fabrication of catalyst layers in inorg. organic composite membranes by electrophoretic deposition)
AB A membrane electrode assembly (MEA) was successfully prepared by electrophoretic deposition (EPD) process onto the inorg.-organic composite membrane composed of three-dimensionally ordered macroporous (3DOM) silica and 2-acrylamido-2-methylpropane sulfonic acid (AMPS) gel polymer. An ethanol suspension of carbon powders with Pt catalyst and ionomer was utilized to the EPD process. The catalyst layers fabricated by the EPD process were well-attached to both sides of the 3DOM composite membrane and those thicknesses were easily controlled by the EPD duration. The obtained MEA exhibited higher cell performance than an ordinary one prepared by decal transfer process, due to improvement in the contact between the 3DOM composite membrane and catalyst layers.
REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 6 OF 36 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2007:154645 CAPLUS <<LOGINID::20080904>>
DOCUMENT NUMBER: 148:36366
TITLE: Fabrication of bilayered YSZ/SDC electrolyte film by electrophoretic deposition for reduced-temperature operating anode-supported SOFC
AUTHOR(S): Matsuda, Motohide; Hosomi, Takushi; Murata, Kenji; Fukui, Takehisa; Miyake, Michihiro
CORPORATE SOURCE: Graduate School of Environmental Science, Okayama University, Okayama, 700-8530, Japan
SOURCE: Journal of Power Sources (2007), 165(1), 102-107
CODEN: JPSODZ; ISSN: 0378-7753

PUBLISHER: Elsevier B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English
IT Fuel cell electrolytes
(bilayered; fabrication of bilayered YSZ/SDC electrolyte film by electrophoretic deposition for reduced-temperature operating anode-supported SOFC)
IT Films
(electrolyte; fabrication of bilayered YSZ/SDC electrolyte film by electrophoretic deposition for reduced-temperature operating anode-supported SOFC)
IT Ceramic coatings
Electrophoretic deposition
Microstructure
(fabrication of bilayered YSZ/SDC electrolyte film by electrophoretic deposition for reduced-temperature operating anode-supported SOFC)
IT Electrolytes
(films; fabrication of bilayered YSZ/SDC electrolyte film by electrophoretic deposition for reduced-temperature operating anode-supported SOFC)
IT Fuel cells
(solid oxide; fabrication of bilayered YSZ/SDC electrolyte film by electrophoretic deposition for reduced-temperature operating anode-supported SOFC)
IT 1313-99-1, Nickel oxide, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(composite with YSZ (8 mol.% Y2O3); fabrication of bilayered YSZ/SDC electrolyte film by electrophoretic deposition for reduced-temperature operating anode-supported SOFC)
IT 55575-06-9, Cerium samarium oxide 114168-16-0, Yttrium zirconium oxide (Y0.16Zr0.92O2.08)
RL: TEM (Technical or engineered material use); USES (Uses)
(fabrication of bilayered YSZ/SDC electrolyte film by electrophoretic deposition for reduced-temperature operating anode-supported SOFC)
IT 148595-66-8, Cobalt iron lanthanum strontium oxide (Co0.2Fe0.8La0.6Sr0.4O3)
RL: TEM (Technical or engineered material use); USES (Uses)
(oxygen-deficient, cathode material; fabrication of bilayered YSZ/SDC electrolyte film by electrophoretic deposition for reduced-temperature operating anode-supported SOFC)
IT 64-17-5, Ethanol, uses
RL: NUU (Other use, unclassified); USES (Uses)
(solvent; fabrication of bilayered YSZ/SDC electrolyte film by electrophoretic deposition for reduced-temperature operating anode-supported SOFC)
IT 7782-42-5, Graphite, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(substrate material; fabrication of bilayered YSZ/SDC electrolyte film by electrophoretic deposition for reduced-temperature operating anode-supported SOFC)
AB Bilayered Y2O3-stabilized ZrO2 (YSZ)/Sm2O3-doped CeO2 (SDC) electrolyte films were successfully fabricated on porous NiO-YSZ composite substrates by electrophoretic deposition (EPD) based on electrophoretic filtration followed by co-firing with the substrates. In EPD, pos. charged YSZ and SDC powders were deposited directly on the substrates, layer by layer from ethanol-based suspensions. Delamination between YSZ and SDC films was avoided by reducing the SDC films' thickness to ca. 1 μm. A single cell was constructed on the bilayered electrolyte films composed of ca. 4 μm-thick YSZ and ca. 1

μm-thick SDC films. As a cathode in the cell, La0.6Sr0.4Co0.2Fe0.8O3-x (LSCF) was used. Maximum output power densities greater than 0.6 W cm-2 were obtained at 700° for the bilayered YSZ/SDC electrolyte cells thus constructed.
REFERENCE COUNT: 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 7 OF 36 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2007:15265 CAPLUS <<LOGINID::20080904>>
DOCUMENT NUMBER: 146:157571
TITLE: Simultaneous determination of streptomycin and oxytetracycline in agricultural antimicrobials by CZE after an experimental design
AUTHOR(S): Maia, Patricia Penido; Amaya-Farfan, Jaime; Rath, Susanne; Reyes, Felix Guillermo Reyes
CORPORATE SOURCE: Department of Food Science, State University of Campinas, Campinas, SP, 13084-971, Brazil
SOURCE: Journal of Pharmaceutical and Biomedical Analysis (2007), 43(2), 450-456
CODEN: JPBADA; ISSN: 0731-7085
PUBLISHER: Elsevier B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English
IT Capillary zone electrophoresis
(simultaneous determination of streptomycin and oxytetracycline in agricultural
antimicrobials by CZE)
IT 57-92-1, Streptomycin 79-57-2, Oxytetracycline
RL: ANT (Analyte); ANST (Analytical study)
(simultaneous determination of streptomycin and oxytetracycline in agricultural
antimicrobials by CZE)
AB A capillary zone electrophoresis (CZE) method was developed and validated for the simultaneous determination of both streptomycin (STP) and oxytetracycline
(OTC) in bactericidal products to be used in agriculture. Using fused-silica capillaries, the influence of the electrolyte composition, pH and concentration, as well as temperature and applied voltage were
investigated using a central composite design to optimize the method. The optimized electrophoretic conditions were as follows: 0.10 M sodium phosphate, pH 2.5, 7.0 kV and 20.0 °C. The method was validated for STP and OTC determination in agricultural formulations through the following performance criteria: linearity and linear range, sensitivity, selectivity, intra-day and inter-day precision, detectability, accuracy and ruggedness. This optimized CZE-method for the identification and quantification of STP and OTC is a potential alternative method to the HPLC methods described by the US Pharmacopeia, with the advantage that the same method could be used for the simultaneous determination of these different antibiotics.
REFERENCE COUNT: 35 THERE ARE 35 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 8 OF 36 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2006:1261305 CAPLUS <<LOGINID::20080904>>
DOCUMENT NUMBER: 146:188530
TITLE: Electrophoretic deposition of organic-inorganic nanocomposites
AUTHOR(S): Zhitomirsky, I.
CORPORATE SOURCE: Department of Materials Science and Engineering, McMaster University, Hamilton, ON, L8S 4L7, Can.

SOURCE: Journal of Materials Science (2006), 41(24), 8186-8195
CODEN: JMTSAS; ISSN: 0022-2461
PUBLISHER: Springer
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English
IT Polymer electrolytes
(composites with inorg. nanoparticles;
electrophoretic deposition of organic-inorg. nanocomposites)
IT Electrophoretic deposition
Hybrid organic-inorganic materials
(electrophoretic deposition of organic-inorg. nanocomposites)
IT Nanoparticles
(inorg., composites with polyelectrolyte matrix;
electrophoretic deposition of organic-inorg. nanocomposites)
IT Nanocomposites
(organic-inorg.; electrophoretic deposition of organic-inorg. nanocomposites)
AB The focus of this review is on a new class of nanocomposites containing inorg. nanoparticles in a polyelectrolyte matrix. The recent advances in the application of electrophoretic deposition for the fabrication of the nanocomposite films are reviewed. New electrochem. strategies are discussed which are based on the use of strong, weak polyelectrolytes, and polymer-metal ion complexes. Many parameters, such as the pH, mol. weight of polyelectrolyte and bath composition influence the deposition process, microstructure and properties of the nanocomposite materials. Various applications, in areas as diverse as catalysis, fuel cells, protection of metals, biomedical implants, quantum dots, superparamagnetic devices, and supercapacitors were proposed for these fascinating new materials.
REFERENCE COUNT: 95 THERE ARE 95 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 9 OF 36 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2006:1162099 CAPLUS <<LOGINID::20080904>>
DOCUMENT NUMBER: 147:148505
TITLE: Electrophoretic deposition for fabrication of YSZ electrolyte film on non-conducting porous NiO-YSZ composite substrate for intermediate temperature SOFC
AUTHOR(S): Hosomi, Takushi; Matsuda, Motohide; Miyake, Michihiro
CORPORATE SOURCE: Department of Environmental Chemistry and Materials, Faculty of Environmental Science and Technology, Okayama University, Tsushima-Naka, Okayama, 700-8530, Japan
SOURCE: Journal of the European Ceramic Society (2006), Volume Date 2007, 27(1), 173-178
CODEN: JECSER; ISSN: 0955-2219
PUBLISHER: Elsevier Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
IT Electrophoretic deposition
Solid electrolytes
(electrophoretic deposition for fabrication of YSZ electrolyte film on non-conducting porous NiO-YSZ substrate)
IT 1313-99-1, Nickel oxide (NiO), processes
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(electrophoretic deposition for fabrication of YSZ electrolyte film on non-conducting porous NiO-YSZ substrate)
IT 64417-98-7P, Yttrium zirconium oxide
RL: SPN (Synthetic preparation); PREP (Preparation)
(electrophoretic deposition for fabrication of YSZ electrolyte film on non-conducting porous NiO-YSZ substrate)

IT 1314-23-4P, Zirconium oxide (ZrO2), preparation
RL: SPN (Synthetic preparation); PREP (Preparation)
(yttria-stabilized; electrophoretic deposition for fabrication of YSZ electrolyte film on non-conducting porous NiO-YSZ substrate)
IT 1314-36-9P, Yttrium oxide (Y2O3), preparation
RL: SPN (Synthetic preparation); PREP (Preparation)
(zirconia stabilized; electrophoretic deposition for fabrication of YSZ electrolyte film on non-conducting porous NiO-YSZ substrate)
AB Electrophoretic deposition (EPD) of YSZ electrolyte films onto porous NiO-YSZ composite substrates that had been pre-coated with graphite thin layers was carried out in the following 2 means for solid oxide fuel cell application: one was EPD based on electrophoretic filtration by which YSZ films were formed on the reverse sides without the graphite layers; the other was EPD on a graphite thin layer pre-coated on the substrates. Dense YSZ electrolyte thin films were successfully obtained in both means, although it was difficult to form YSZ films that were strongly adherent to the substrates using the latter means. The densification of YSZ films was assisted by shrinkage of the substrates during co-firing. A single cell was constructed on .apprx.5 μm thick dense YSZ films fabricated using the EPD based on electrophoretic filtration. Maximum power densities over 0.06, 0.35, 1.10 and 2.01 W/cm2 were attained, resp., at 500, 600, 700 and 800° on the cell.
REFERENCE COUNT: 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 10 OF 36 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2006:1085947 CAPLUS <<LOGINID::20080904>>
DOCUMENT NUMBER: 146:31194
TITLE: Electrophoretic deposition of YSZ particles on non-conducting porous NiO-YSZ substrates for solid oxide fuel cell applications
AUTHOR(S): Besra, Laxmidhar; Compson, Charles; Liu, Meilin
CORPORATE SOURCE: School of Materials Science and Engineering, Georgia Institute of Technology, Atlanta, GA, 30332-0245, USA
SOURCE: Journal of the American Ceramic Society (2006), 89(10), 3003-3009
CODEN: JACTAW; ISSN: 0002-7820
PUBLISHER: Blackwell Publishing, Inc.
DOCUMENT TYPE: Journal
LANGUAGE: English
IT Electrophoretic deposition
(electrophoretic deposition of Y2O3-stabilized ZrO2 electrolyte particles on nonconducting porous NiO/Y2O3-stabilized ZrO2 composite substrates for solid oxide fuel cells)
IT Ceramics
(porous, yttria-zirconia/nickel oxide composites; electrophoretic deposition of Y2O3-stabilized ZrO2 electrolyte particles on nonconducting porous NiO/Y2O3-stabilized ZrO2 composite substrates for solid oxide fuel cells)
IT Fuel cells
(solid oxide; electrophoretic deposition of Y2O3-stabilized ZrO2 electrolyte particles on nonconducting porous NiO/Y2O3-stabilized ZrO2 composite substrates for solid oxide fuel cells)
IT Solid electrolytes
(yttria-stabilized zirconia; electrophoretic deposition of

Y2O3-stabilized ZrO2 electrolyte particles on nonconducting porous NiO/Y2O3-stabilized ZrO2 composite substrates for solid oxide fuel cells)

IT Ceramic composites
Electric insulators
(yttria-zirconia/nickel oxide; electrophoretic deposition of Y2O3-stabilized ZrO2 electrolyte particles on nonconducting porous NiO/Y2O3-stabilized ZrO2 composite substrates for solid oxide fuel cells)

IT 108916-22-9, Lanthanum manganese strontium oxide (La0.8MnSr0.2O3)
RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(cathode, fuel cell component; electrophoretic deposition of Y2O3-stabilized ZrO2 electrolyte particles on nonconducting porous NiO/Y2O3-stabilized ZrO2 composite substrates for solid oxide fuel cells)

IT 64417-98-7, Yttrium zirconium oxide
RL: NUU (Other use, unclassified); USES (Uses)
(composites with nickel oxide, substrates; electrophoretic deposition of Y2O3-stabilized ZrO2 electrolyte particles on nonconducting porous NiO/Y2O3-stabilized ZrO2 composite substrates for solid oxide fuel cells)

IT 1313-99-1, Nickel oxide (NiO), uses
RL: NUU (Other use, unclassified); USES (Uses)
(composites with yttria-stabilized zirconia, substrates; electrophoretic deposition of Y2O3-stabilized ZrO2 electrolyte particles on nonconducting porous NiO/Y2O3-stabilized ZrO2 composite substrates for solid oxide fuel cells)

IT 114168-16-0, Tz-8y
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
(films; electrophoretic deposition of Y2O3-stabilized ZrO2 electrolyte particles on nonconducting porous NiO/Y2O3-stabilized ZrO2 composite substrates for solid oxide fuel cells)

IT 1314-23-4, Zirconium oxide (ZrO2), processes
RL: PEP (Physical, engineering or chemical process); PRP (Properties); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(yttria-stabilized, coatings; electrophoretic deposition of Y2O3-stabilized ZrO2 electrolyte particles on nonconducting porous NiO/Y2O3-stabilized ZrO2 composite substrates for solid oxide fuel cells)

AB This paper reports a method of performing electrophoretic deposition (EPD) on non-conducting substrates overcoming the requirement of a conducting substrate through the use of porous substrates. The conductivity of the substrate is therefore no longer a limiting factor in the application of EPD. This method is applicable to the fabrication of thick or thin layers of ceramic or metal for various applications. As an example, thin and dense yttria-stabilized zirconia (YSZ) layers have been deposited on a non-conducting NiO-YSZ substrate by EPD from a non-aqueous suspension. A solid oxide fuel cell constructed on these sintered bilayers exhibited power densities of 384 and 611 mW/cm2 at 750 and 850°C, resp.

REFERENCE COUNT: 59 THERE ARE 59 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 11 OF 36 CAPLUS 
ACCESSION NUMBER: 2006:1065751 CAPLUS <<LOGINID::20080904>>

DOCUMENT NUMBER: 145:380429
TITLE: Manufacture of membrane-electrode assemblies by electrophoresis
INVENTOR(S): Yoshitake, Masaru; Terazono, Shinji; Kanemura, Kiyoshi
PATENT ASSIGNEE(S): Asahi Glass Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 17pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| JP 2006277984 | A | 20061012 | JP 2005-91088 | 20050328 |

PRIORITY APPLN. INFO.: JP 2005-91088 20050328

IT Alcohols, uses
RL: NUU (Other use, unclassified); USES (Uses)
(dispersion media; manufacture of membrane-electrode assemblies by electrophoresis of alc. dispersions containing catalyst powders and cation exchangers on electrolyte membranes)

IT Catalysts
(electrocatalysts; manufacture of membrane-electrode assemblies by electrophoresis of alc. dispersions containing catalyst powders and cation exchangers on electrolyte membranes)

IT Polyoxyalkylenes, uses
RL: CAT (Catalyst use); DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)
(fluorine- and sulfo-containing, ionomers, Nafion, cation exchangers; manufacture of membrane-electrode assemblies by electrophoresis of alc. dispersions containing catalyst powders and cation exchangers on electrolyte membranes)

IT Cation exchangers
Electrophoretic deposition
Fuel cell electrolytes
(manufacture of membrane-electrode assemblies by electrophoresis of alc. dispersions containing catalyst powders and cation exchangers on electrolyte membranes)

IT Fuel cells
(polymer electrolyte; manufacture of membrane-electrode assemblies by electrophoresis of alc. dispersions containing catalyst powders and cation exchangers on electrolyte membranes)

IT Fluoropolymers, uses
RL: CAT (Catalyst use); DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)
(polyoxyalkylene-, sulfo-containing, ionomers, Nafion, cation exchangers; manufacture of membrane-electrode assemblies by electrophoresis of alc. dispersions containing catalyst powders and cation exchangers on electrolyte membranes)

IT Ionomers
RL: CAT (Catalyst use); DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)
(polyoxyalkylenes, fluorine- and sulfo-containing, Nafion, cation exchangers; manufacture of membrane-electrode assemblies by electrophoresis of alc. dispersions containing catalyst powders and cation exchangers on electrolyte membranes)

IT Polyimides, uses
RL: DEV (Device component use); PEP (Physical, engineering or chemical

process); PYP (Physical process); PROC (Process); USES (Uses)
(porous films, composites with sulfo-containing acrylic polymer, electrolyte membranes; manufacture of membrane-electrode assemblies by electrophoresis of alc. dispersions containing catalyst powders and cation exchangers on electrolyte membranes)

IT Fluoropolymers, uses
RL: CAT (Catalyst use); DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)
(sulfo-containing, cation exchangers; manufacture of membrane-electrode assemblies by electrophoresis of alc. dispersions containing catalyst powders and cation exchangers on electrolyte membranes)

IT 7440-06-4, Platinum, uses
RL: CAT (Catalyst use); DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)
(carbon-supported; manufacture of membrane-electrode assemblies by electrophoresis of alc. dispersions containing catalyst powders and cation exchangers on electrolyte membranes)

IT 31175-20-9
RL: CAT (Catalyst use); DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)
(cation exchanger; manufacture of membrane-electrode assemblies by electrophoresis of alc. dispersions containing catalyst powders and cation exchangers on electrolyte membranes)

IT 64-17-5, Ethanol, uses
RL: NUU (Other use, unclassified); USES (Uses)
(dispersion media; manufacture of membrane-electrode assemblies by electrophoresis of alc. dispersions containing catalyst powders and cation exchangers on electrolyte membranes)

IT 66796-30-3, Nafion 117
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)
(electrolyte membranes; manufacture of membrane-electrode assemblies by electrophoresis of alc. dispersions containing catalyst powders and cation exchangers on electrolyte membranes)

IT 390761-63-4, TEC 10E50E
RL: CAT (Catalyst use); DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)
(manufacture of membrane-electrode assemblies by electrophoresis of alc. dispersions containing catalyst powders and cation exchangers on electrolyte membranes)

IT 69824-22-2P, 2-Acrylamido-2-methylpropanesulfonic acid-N,N'-methylenebis(acrylamide) copolymer
RL: DEV (Device component use); IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); PYP (Physical process); PREP (Preparation); PROC (Process); USES (Uses)
(polyimide or silica composites, electrolyte membranes; manufacture of membrane-electrode assemblies by electrophoresis of alc. dispersions containing catalyst powders and cation exchangers on electrolyte membranes)

IT 7631-86-9, Silica, uses
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)
(porous, composite with sulfo-containing acrylic polymer, electrolyte membrane; manufacture of membrane-electrode assemblies by electrophoresis of alc. dispersions containing catalyst powders and cation exchangers on electrolyte membranes)

IT 7440-44-0, Carbon, uses

RL: CAT (Catalyst use); DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)
(support for Pt; manufacture of membrane-electrode assemblies by electrophoresis of alc. dispersions containing catalyst powders and cation exchangers on electrolyte membranes)

AB In the manufacture, anode and/or cathode catalyst layers are formed by electrophoresis of dispersions containing catalyst powders, cation exchangers, and alcs. at temperature of the dispersions ≤35°, while solid electrolyte membranes are in contact with the dispersions. The solid electrolyte membranes are bonded to the resulting catalyst layers strong enough to avoid being hot-pressed. Furthermore, fuel cells with high catalyst utilization efficiency are manufactured by the above method.

L1 ANSWER 12 OF 36 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2006:240766 CAPLUS <LOGINID::20080904>>
DOCUMENT NUMBER: 144:303446
TITLE: Porous anode body for solid electrolyte capacitor and method for manufacturing the same
INVENTOR(S): Thon, Assaf; Cohen, Nissim
PATENT ASSIGNEE(S): Cerel (Ceramic Technologies) Ltd., Israel
SOURCE: PCT Int. Appl., 68 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| WO 2006027767 | A1 | 20060316 | WO 2004-IL865 | 20040920 |
| W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW | | | | |
| RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM | | | | |

PRIORITY APPLN. INFO.: IL 2004-164017 A 20040909

IT Electrolytic capacitors
(anodes; porous anode body for solid electrolyte capacitor and method for manufacturing)
IT Capacitor electrodes
(electrolytic-capacitor anodes; porous anode body for solid electrolyte capacitor and method for manufacturing)
IT Anodes
(electrolytic-capacitor; porous anode body for solid electrolyte capacitor and method for manufacturing)
IT Sound and Ultrasound
(in mixing; porous anode body for solid electrolyte capacitor and method for manufacturing)
IT Composites
Dispersion (of materials)
Electrophoretic deposition
Foils
Porous materials
Sintering

Wires
(porous anode body for solid electrolyte capacitor and method for manufacturing)

IT Alcohols, processes
RL: NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)
(porous anode body for solid electrolyte capacitor and method for manufacturing)

IT Polyoxyalkylenes, processes
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(porous anode body for solid electrolyte capacitor and method for manufacturing)

IT Quaternary ammonium compounds, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(porous anode body for solid electrolyte capacitor and method for manufacturing)

IT Mixing
(ultrasonic; porous anode body for solid electrolyte capacitor and method for manufacturing)

IT 7440-25-7, Tantalum, properties 12034-57-0, Niobium oxide (NbO)
RL: AMX (Analytical matrix); PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); TEM (Technical or engineered material use); ANST (Analytical study); PROC (Process); USES (Uses)
(porous anode body for solid electrolyte capacitor and method for manufacturing)

IT 64-17-5, Ethanol, processes 67-56-1, Methanol, processes 67-63-0, 2-Propanol, processes 71-23-8, Propanol, processes 71-36-3, Butanol, processes 71-41-0, Pentanol, processes 75-05-8, Acetonitrile, processes 75-52-5, Nitromethane, processes 26913-06-4, Polyethylenimine
RL: NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)
(porous anode body for solid electrolyte capacitor and method for manufacturing)

IT 1313-96-8P, Niobium pentoxide
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)
(porous anode body for solid electrolyte capacitor and method for manufacturing)

IT 3264-82-2, Nickel acetylacetonate 7429-90-5, Aluminum, processes 7439-95-4, Magnesium, processes 7440-03-1, Niobium, processes 7440-32-6, Titanium, processes 7440-66-6, Zinc, processes 7440-67-7, Zirconium, processes 7446-70-0, Aluminum chloride, processes 7664-38-2D, Phosphoric acid, esters 7718-54-9, Nickel dichloride, processes 14024-48-7, Cobalt diacetylacetonate 25322-68-3, Polyethyleneglycol
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(porous anode body for solid electrolyte capacitor and method for manufacturing)

AB The present invention is a porous green anode body, which comprises a multitude of solid particles substantially uniformly dispersed throughout the volume occupied by the anode body and voids that form a network of interconnecting channels interspersed between the particles. The invention also concerns a method for production of the porous green anode body by electrophoretic deposition. The invention further

encompasses a porous sintered green anode body produced from the porous green anode body, a solid electrolyte capacitor comprising the porous sintered anode body, and methods of producing them. This gives stable anodes.

REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 13 OF 36 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2005:499340 CAPLUS <<LOGINID::20080904>>
DOCUMENT NUMBER: 143:177701
TITLE: Fabrication of an anode-supported gadolinium-doped ceria solid oxide fuel cell and its operation at 550°C
AUTHOR(S): Oishi, N.; Atkinson, A.; Brandon, N. P.; Kilner, J. A.; Steele, B. C. H.
CORPORATE SOURCE: Centre for Ion Conducting Membranes, Imperial College, London, SW7 2AZ, UK
SOURCE: Journal of the American Ceramic Society (2005), 88(6), 1394-1396
CODEN: JACTAW; ISSN: 0002-7820
PUBLISHER: Blackwell Publishing, Inc.
DOCUMENT TYPE: Journal
LANGUAGE: English

IT Fuel cell anodes
(Ni-CGO composite; electrophoretic infiltration/isostatic pressing preparation of an anode-supported Gd-doped ceria solid electrolyte film and its performance as a component in a solid oxide fuel cell at 550°C)

IT Solid electrolytes
(cerium gadolinium oxide films; electrophoretic infiltration/isostatic pressing preparation of an anode-supported Gd-doped ceria solid electrolyte film and its performance as a component in a solid oxide fuel cell at 550°C)

IT Electric current
Open circuit potential
(electrophoretic infiltration/isostatic pressing preparation of an anode-supported Gd-doped ceria solid electrolyte film and its performance as a component in a solid oxide fuel cell at 550°C)

IT Electrophoretic deposition
(infiltration; electrophoretic infiltration/isostatic pressing preparation of an anode-supported Gd-doped ceria solid electrolyte film and its performance as a component in a solid oxide fuel cell at 550°C)

IT Molding
(isostatic pressing; electrophoretic infiltration/isostatic pressing preparation of an anode-supported Gd-doped ceria solid electrolyte film and its performance as a component in a solid oxide fuel cell at 550°C)

IT Fuel cells
(solid oxide; electrophoretic infiltration/isostatic pressing preparation of an anode-supported Gd-doped ceria solid electrolyte film and its performance as a component in a solid oxide fuel cell at 550°C)

IT Electric potential
(terminal; electrophoretic infiltration/isostatic pressing preparation of an anode-supported Gd-doped ceria solid electrolyte film and its performance as a component in a solid oxide fuel cell at 550°C)

IT 148595-66-8D, Cobalt iron lanthanum strontium oxide (Co0.2Fe0.8La0.6Sr0.4O3), oxygen-deficient
RL: DEV (Device component use); USES (Uses)

(cathode, fuel cell component; electrophoretic infiltration/isostatic pressing preparation of an anode-supported Gd-doped ceria solid electrolyte film and its performance as a component in a solid oxide fuel cell at 550°C)

IT 1313-99-1, Nickel oxide (NiO), uses
RL: DEV (Device component use); USES (Uses)
(composite with cerium gadolinium oxide, anode; electrophoretic infiltration/isostatic pressing preparation of an anode-supported Gd-doped ceria solid electrolyte film and its performance as a component in a solid oxide fuel cell at 550°C)

IT 183546-68-1D, Cerium gadolinium oxide (Ce0.9Gd0.1O2), oxygen-deficient
RL: CPS (Chemical process); DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process); USES (Uses)
(electrolyte film, fuel cell component; electrophoretic infiltration/isostatic pressing preparation of an anode-supported Gd-doped ceria solid electrolyte film and its performance as a component in a solid oxide fuel cell at 550°C)

AB Ce0.9Gd0.1O2-x (CGO) layers were deposited onto nonconductive porous NiO-CGO supports by electrophoretic infiltration, and then compacted by isostatic pressing to achieve a high packing d. of the deposited layer. The bilayers were sintered to give dense CGO layers at 1290°C in air. A fuel cell comprising an La0.6Sr0.4Co0.2Fe0.8O3-x cathode, a 10-μm CGO electrolyte, and a Ni-CGO anode was tested at 550°C with humidified 10% H2 and air. The cell showed an open circuit voltage of 0.86 V and delivered a steady current of about 470 mA/cm2 at a terminal voltage of 0.24 V.

REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 14 OF 36 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2005:408893 CAPLUS <<LOGINID::20080904>>
DOCUMENT NUMBER: 142:449388
TITLE: System and a method for manufacturing an electrolyte using electro deposition
INVENTOR(S): Punsalan, David; Herman, Gregory; Mardilovich, Peter
PATENT ASSIGNEE(S): USA
SOURCE: U.S. Pat. Appl. Publ., 13 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| US 20050098438 | A1 | 20050512 | US 2003-705486 | 20031110 |
| PRIORITY APPLN. INFO.: | | | US 2003-705486 | 20031110 |

IT Polyoxyalkylenes, uses
RL: NUU (Other use, unclassified); USES (Uses)
(fluorine- and sulfo-containing, ionomers; manufacturing electrolyte using electrodeposition)

IT Electrodeposition
(manufacturing electrolyte using)

IT Electrolytes
Electrophoretic deposition
Polymer electrolytes
(manufacturing electrolyte using electrodeposition)

IT Fuel cells
(manufacturing electrolyte using electrodeposition for)

IT Ceramics

(manufacturing electrolyte using electrodeposition for fuel cell, comprising)
IT Fluoropolymers, uses
RL: NUU (Other use, unclassified); USES (Uses)
(polyoxyalkylene-, sulfo-containing, ionomers; manufacturing electrolyte using electrodeposition)
IT Ionomers
RL: NUU (Other use, unclassified); USES (Uses)
(polyoxyalkylenes, fluorine- and sulfo-containing; manufacturing electrolyte using electrodeposition)
IT Ion exchange membranes
(proton; manufacturing electrolyte using electrodeposition for fuel cell with)
IT 7440-02-0, Nickel, uses 12597-68-1, Stainless steel, uses
RL: DEV (Device component use); USES (Uses)
(temporary electrode in manufacturing electrolyte using electrodeposition)
AB A method of forming an electrolyte includes removably coupling a perimeter support to a temporary substrate, and electrodepositing an electrolyte composite film on the temporary substrate.

L1 ANSWER 15 OF 36 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2004:1103961 CAPLUS <<LOGINID::20080904>>
DOCUMENT NUMBER: 142:300839
TITLE: Direct EPD of YSZ Electrolyte Film onto Porous NiO-YSZ Composite Substrate for Reduced-Temperature Operating Anode-Supported SOFC
AUTHOR(S): Matsuda, Motohide; Hosomi, Takushi; Murata, Kenji; Fukui, Takehisa; Miyake, Michihiro
CORPORATE SOURCE: Department of Environmental Chemistry and Materials, Faculty of Environmental Science and Technology, Okayama University, Okayama, 700-8530, Japan
SOURCE: Electrochemical and Solid-State Letters (2005), 8(1), A8-A11
CODEN: ESLEF6; ISSN: 1099-0062
PUBLISHER: Electrochemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
IT Electrophoretic deposition
Fuel cell anodes
Fuel cell electrolytes
(direct EPD of YSZ electrolyte on porous NiO-YSZ composite anode material for SOFCs operating at lower temps.)
IT Fuel cells
(solid oxide; direct EPD of YSZ electrolyte on porous NiO-YSZ composite anode material for SOFCs operating at lower temps.)
IT 7782-42-5, Graphite, uses
RL: DEV (Device component use); USES (Uses)
(composite nickel oxide coated with; direct EPD of YSZ electrolyte on porous NiO-YSZ composite anode material for SOFCs operating at lower temps.)
IT 1313-99-1, Nickel oxide (NiO), uses
RL: DEV (Device component use); USES (Uses)
(composite with YSZ, graphite-coated; direct EPD of YSZ electrolyte on porous NiO-YSZ composite anode material for SOFCs operating at lower temps.)
IT 114168-16-0, Yttrium zirconium oxide (Y0.16Zr0.92O2.08)
RL: DEV (Device component use); USES (Uses)
(electrolyte, composite with nickel oxide; direct EPD of YSZ electrolyte on porous NiO-YSZ composite anode material for SOFCs operating at lower temps.)

AB Electrophoretic deposition (EPD) was used to fabricate anode-supported yttria-stabilized zirconia (YSZ) electrolyte films. For the EPD, thin layers of graphite were pre-coated on the surface of a nonconducting porous NiO-YSZ composite anode substrate. Uniform YSZ green films were deposited on the side which did not have a graphite layer. The specimens were transformed into dense bodies .apprx.5 to 10 μm thick after being co-fired with the substrates. The cell performance of the .apprx.5 μm thick dense YSZ films, supported on the anode substrates, was tested using a La(Sr)Co(Fe)O3 cathode. Maximum output power densities of .apprx.0.19, .apprx.0.61, and .apprx.1.02 W/cm2 were attained at 600, 700, and 800° resp.
REFERENCE COUNT: 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 16 OF 36 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2004:884884 CAPLUS <<LOGINID::20080904>>
DOCUMENT NUMBER: 142:246623
TITLE: Innovation of novel functional material processing technique by using electrophoretic deposition process
AUTHOR(S): Kanamura, Kiyoshi; Hamagami, Jun-Ichi
CORPORATE SOURCE: Department of Applied Chemistry, Graduate School of Engineering, Tokyo Metropolitan University, 1-1 Minami-Ohsawa, Hachioji, Tokyo, 192-0397, Japan
SOURCE: Solid State Ionics (2004), 172(1-4), 303-308 CODEN: SSIOD3; ISSN: 0167-2738
PUBLISHER: Elsevier B.V.
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English
IT Filters
(ceramic; innovation of novel functional material processing technique by using electrophoretic deposition process)
IT Fuel cells
(fabrication of membrane electrode assembly using electrophoretic deposition process for)
IT Membrane electrodes
(fabrication using electrophoretic deposition process)
IT Ceramics
(filters; innovation of novel functional material processing technique by using electrophoretic deposition process)
IT Battery electrodes
Electrophoretic deposition
(innovation of novel functional material processing technique by using electrophoretic deposition process)
IT Secondary batteries
(lithium; electrode for, fabrication using electrophoretic deposition process)
IT 7631-86-9, Silica, uses 9003-53-6, Polystyrene
RL: NUU (Other use, unclassified); USES (Uses)
(fabrication of membrane electrode assembly by electrophoretic deposition process using)
AB A review with refs. concerning innovation of novel functional material processing technique by using electrophoretic deposition process is presented. Electrophoretic deposition (EPD) process, which involved a movement and deposition of charged particles in a solution according to an elec. field, was applied to a creation of functional materials and devices. For example, this EPD method have been applied to prepare composite electrodes for rechargeable lithium batteries, separation layer for ceramic filter, and membrane electrode assembly for polymer electrolyte fuel cell. Recently, a technique using a local elec. field generated in the EPD suspension was developed for a

novel particle assembling. This technique is so-called "Micro-Electrophoretic Deposition (μ-EPD) Process". A microdot consisting of monodisperse polystyrene or silica spheres have been already prepared, which worked as photonic crystals.

REFERENCE COUNT: 31 THERE ARE 31 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 17 OF 36 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2004:345857 CAPLUS <<LOGINID::20080904>>
DOCUMENT NUMBER: 141:147070
TITLE: Electrodeposition of composite ceria - polyethylenimine films
AUTHOR(S): Zhitomirsky, I.
CORPORATE SOURCE: Department of Materials Science and Engineering, McMaster University, Hamilton, ON, L8S 4L7, Can.
SOURCE: Surface Engineering (2003), Volume Date 2004, 20(1), 43-47
CODEN: SUENET; ISSN: 0267-0844
PUBLISHER: Maney Publishing
DOCUMENT TYPE: Journal
LANGUAGE: English

IT Ceramic composites
Electrolysis
Electrophoresis
Hybrid organic-inorganic materials
(combined electrophoretic and electrolytic method for electrodeposition of ceria - polyethylenimine composite films)

IT Intercalation
(electrochem.; combined electrophoretic and electrolytic method for electrodeposition of ceria - polyethylenimine composite films)

IT Carbon fibers, uses
RL: NUU (Other use, unclassified); USES (Uses)
(felt, substrate; combined electrophoretic and electrolytic method for electrodeposition of ceria - polyethylenimine composite films)

IT 9002-98-6, Polyethylenimine
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(combined electrophoretic and electrolytic method for electrodeposition of ceria - polyethylenimine composite films)

IT 1306-38-3P, Ceria, uses
RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(combined electrophoretic and electrolytic method for electrodeposition of ceria - polyethylenimine composite films)

IT 7790-86-5, Cerium chloride
RL: RCT (Reactant); RACT (Reactant or reagent)
(combined electrophoretic and electrolytic method for electrodeposition of ceria - polyethylenimine composite films)

IT 13520-92-8, Zirconium chloride oxide (ZrCl2O) octahydrate
RL: NUU (Other use, unclassified); USES (Uses)
(electrolyte containing; combined electrophoretic and electrolytic method for electrodeposition of ceria - polyethylenimine composite films)

IT 7440-02-0, Nickel, uses 7440-06-4, Platinum, uses 7782-42-5, Graphite, uses
RL: NUU (Other use, unclassified); USES (Uses)
(substrate; combined electrophoretic and electrolytic method for electrodeposition of ceria - polyethylenimine composite films)

AB A combined electrophoretic - electrolytic deposition method was used in fabrication of composite organic - inorg. films. Composite films consisting of ceria ceramic and polyethylenimine (PEI) were obtained via cathodic electrodeposition on Ni, Pt, graphite and carbon felt substrates. By varying the concentration of PEI in solns. and the deposition time, the amount of deposited material and its composition could be controlled. The deposits were studied by x-ray diffraction, thermogravimetric anal. and SEM. A mechanism of electrochem. intercalation of the cationic polymer into ceria deposits is discussed.

REFERENCE COUNT: 40 THERE ARE 40 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 18 OF 36 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2003:551052 CAPLUS <<LOGINID::20080904>>

DOCUMENT NUMBER: 139:87884

TITLE: Hollow inorganic membranes produced by metal or composite electrodeposition for solid oxide fuel cell applications

INVENTOR(S): Sarkar, Partho

PATENT ASSIGNEE(S): Alberta Research Council, Can.

SOURCE: U.S. Pat. Appl. Publ., 15 pp.
CODEN: USXXCO

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 6

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| US 20030134176 | A1 | 20030717 | US 2002-53241 | 20020116 |
| US 6846588 | B2 | 20050125 | | |
| US 20030134169 | A1 | 20030717 | US 2002-78548 | 20020214 |
| US 6824907 | B2 | 20041130 | | |
| US 20030134170 | A1 | 20030717 | US 2002-156755 | 20020523 |
| US 6936367 | B2 | 20050830 | | |
| US 20030134171 | A1 | 20030717 | US 2002-207668 | 20020725 |
| US 6893762 | B2 | 20050517 | | |
| CA 2472778 | A1 | 20030731 | CA 2003-2472778 | 20030116 |
| WO 2003062503 | A1 | 20030731 | WO 2003-CA59 | 20030116 |
| W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW | | | | |
| RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG | | | | |
| EP 1466040 | A1 | 20041013 | EP 2003-731643 | 20030116 |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK | | | | |
| JP 2005515610 | T | 20050526 | JP 2003-562363 | 20030116 |
| CN 1639391 | A | 20050713 | CN 2003-804586 | 20030116 |
| US 20060051643 | A1 | 20060309 | US 2005-522235 | 20050809 |

PRIORITY APPLN. INFO.:

| | |
|---|---|
| US 2002-53241 | A2 20020116 |
| US 2002-78548 | A2 20020214 |
| US 2002-156755 | A2 20020523 |
| US 2002-207668 | A1 20020725 |
| WO 2003-CA59 | W 20030116 |

IT Coating process
(dip; hollow inorg. membranes produced by metal or composite electrodeposition for solid oxide fuel cell applications)
IT Ceramics
(electrolyte; hollow inorg. membranes produced by metal or composite electrodeposition for solid oxide fuel cell applications)
IT Electrodeposition
Electrophoretic deposition
Membranes, nonbiological
Sintering
(hollow inorg. membranes produced by metal or composite electrodeposition for solid oxide fuel cell applications)
IT Carbon fibers, uses
RL: DEV (Device component use); USES (Uses)
(hollow inorg. membranes produced by metal or composite electrodeposition for solid oxide fuel cell applications)
IT Carbon black, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(hollow inorg. membranes produced by metal or composite electrodeposition for solid oxide fuel cell applications)
IT Organic compounds, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(hollow inorg. membranes produced by metal or composite electrodeposition for solid oxide fuel cell applications)
IT Polymers, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(hollow inorg. membranes produced by metal or composite electrodeposition for solid oxide fuel cell applications)
IT Combustibles
(particles; hollow inorg. membranes produced by metal or composite electrodeposition for solid oxide fuel cell applications)
IT Fuel cells
(solid oxide; hollow inorg. membranes produced by metal or composite electrodeposition for solid oxide fuel cell applications)
IT 7440-02-0, Nickel, uses 7440-05-3, Palladium, uses 7440-06-4, Platinum, uses 7440-22-4, Silver, uses 7440-47-3, Chromium, uses 7440-50-8, Copper, uses 7440-57-5, Gold, uses 64417-98-7, Yttrium zirconium oxide
RL: DEV (Device component use); USES (Uses)
(hollow inorg. membranes produced by metal or composite electrodeposition for solid oxide fuel cell applications)
IT 59707-46-9, Lanthanum manganese strontium oxide
RL: TEM (Technical or engineered material use); USES (Uses)
(hollow inorg. membranes produced by metal or composite electrodeposition for solid oxide fuel cell applications)
IT 7440-44-0, Carbon, uses
RL: DEV (Device component use); USES (Uses)
(rod; hollow inorg. membranes produced by metal or composite electrodeposition for solid oxide fuel cell applications)
IT 1314-23-4, Zirconia, uses
RL: DEV (Device component use); USES (Uses)
(yttria-stabilized; hollow inorg. membranes produced by metal or composite electrodeposition for solid oxide fuel cell applications)
IT 1314-36-9, Yttria, uses
RL: DEV (Device component use); USES (Uses)
(zirconia stabilized with; hollow inorg. membranes produced by metal or composite electrodeposition for solid oxide fuel cell applications)
AB This invention relates to a method of producing a hollow inorg. membrane that is particularly suitable for solid oxide fuel cell applications, as

well as producing hollow inorg. composite laminated membranes having at least one such hollow inorg. membrane. The method comprises electrodepositing an inorg. material that includes at least some elec. conductive metal and some ionically conductive ceramic onto an elec. conductive combustible core, drying the core bearing the deposited inorg. material, then, sintering the core bearing the deposited inorg. material such that the core combusts, thereby producing a hollow inorg. membrane. The method may further comprise electrophoretically depositing a ceramic composition onto the hollow inorg. membrane, to produce an assembly of hollow inorg. composite laminated membranes.

REFERENCE COUNT: 68 THERE ARE 68 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 19 OF 36 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2003:401574 CAPLUS <<LOGINID::20080904>>

DOCUMENT NUMBER: 139:137219

TITLE: Electrodeposition of ceramics and ceramic composites for fuel cell applications

AUTHOR(S): Zhitomirsky, I.; Petric, A.

CORPORATE SOURCE: Department of Materials Science and Engineering, McMaster University, Hamilton, ON, L8S 4L7, Can.

SOURCE: Surface Engineering: Coatings and Heat Treatments, Proceedings of the 1st ASM International Surface Engineering Congress and the 13th International Federation for Heat Treatment and Surface Engineering Congress, Columbus, OH, United States, Oct. 7-10, 2002 (2003), Meeting Date 2002, 646-651. Editor(s): Popoola, Oludele O. ASM International: Materials Park, Ohio.
CODEN: 69DYAM; ISBN: 0-87170-781-0

DOCUMENT TYPE: Conference

LANGUAGE: English

IT Cermets
(Ni-yttria stabilized zirconia; electrodeposition of ceramics and ceramic composites for fuel cell applications)

IT Polyvinyl butyrals
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)
(binder; electrodeposition of ceramics and ceramic composites for fuel cell applications)

IT Adhesion, physical
Ball milling
Ceramic coatings
Ceramic composites
Ceramics
Electrodeposition
Electrodes
Electrolytes
Electrophoretic deposition
Microstructure
Strength
(electrodeposition of ceramics and ceramic composites for fuel cell applications)

IT Adsorption
(of polymers; electrodeposition of ceramics and ceramic composites for fuel cell applications)

IT Fuel cells
(solid oxide; electrodeposition of ceramics and ceramic composites for fuel cell applications)

IT Molding
(tape-casting, of cermet substrates; electrodeposition of ceramics and

ceramic composites for fuel cell applications)

IT 76688-72-7D, Emphos PS 21A, esters
RL: MOA (Modifier or additive use); USES (Uses)
(dispersant; electrodeposition of ceramics and ceramic composites for fuel cell applications)

IT 9002-98-6, Polyethylenimine 26062-79-3, Poly(diallyldimethylammonium chloride)
RL: MOA (Modifier or additive use); USES (Uses)
(electrodeposition of ceramics and ceramic composites for fuel cell applications)

IT 64-17-5, Ethanol, uses 67-63-0, Isopropanol, uses
RL: NUU (Other use, unclassified); USES (Uses)
(electrodeposition of ceramics and ceramic composites for fuel cell applications)

IT 1306-38-3P, Cerium oxide (CeO2), preparation 12017-94-6P, Chromium lanthanum oxide (CrLaO3) 55575-02-5DP, Cerium gadolinium oxide, oxygen-deficient 59707-46-9P, Lanthanum manganese strontium oxide 114168-16-0P, Yttrium zirconium oxide (Y0.16Zr0.92O2.08) 148595-69-1DP, Cobalt iron lanthanum strontium oxide (Co0.2Fe0.8La0.8Sr0.2O3), oxygen-deficient 239467-10-8DP, Gallium lanthanum magnesium strontium oxide (Ga0.8La0.8Mg0.2Sr0.2O3), oxygen-deficient
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(electrodeposition of ceramics and ceramic composites for fuel cell applications)

IT 7440-02-0, Nickel, processes
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process)
(foils, substrates; electrodeposition of ceramics and ceramic composites for fuel cell applications)

IT 12177-86-5P, Calcium manganese oxide (CaMnO3)
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(perovskite-structured; electrodeposition of ceramics and ceramic composites for fuel cell applications)

IT 65099-59-4, Calcium manganese oxide (Ca2Mn3O8)
RL: FMU (Formation, unclassified); FORM (Formation, nonpreparative)
(phase; electrodeposition of ceramics and ceramic composites for fuel cell applications)

IT 7790-86-5, Cerium chloride (CeCl3) 10025-84-0, Lanthanum chloride (LaCl3) heptahydrate 10025-94-2, Yttrium chloride (YCl3) hexahydrate 10060-12-5, Chromium chloride (CrCl3) hexahydrate 13446-34-9, Manganese chloride (MnCl2) tetrahydrate 13450-84-5, Gadolinium chloride (GdCl3) hexahydrate 13477-34-4, Calcium nitrate (Ca(NO3)2) tetrahydrate 13520-92-8, Zirconium chloride oxide (ZrCl2O) octahydrate
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)
(starting material; electrodeposition of ceramics and ceramic composites for fuel cell applications)

IT 147703-98-8
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process)
(substrate; electrodeposition of ceramics and ceramic composites for fuel cell applications)

AB Cathodic electrodeposition techniques were developed and utilized for deposition of ceramic materials for application in solid oxide fuel cells (SOFCs). Ceramic coatings of ≤100 μm thickness were prepared by electrophoretic deposition (EPD) or electrolytic deposition (ELD). Advanced bath compns. were developed for EPD of electrode and electrolyte materials such as yttria stabilized zirconia (YSZ), Ce1-xGdxO2-y (CGO) La0.8Sr0.2Ga0.875Mg0.125O3-x (LSGM), La0.8Sr0.2Co0.2Fe0.8O3-x (LSCF) and (La0.8Sr0.2)0.98MnO3-.vdelta. (LSM). The use of the common solvent-dispersant-binder system enabled EPD of consecutive layers of

different materials. Electrolytic deposition has been utilized for deposition of thin layers of YSZ, CGO, LaCrO3, CaMnO3 and CeO2 for possible applications as fuel cell electrolytes, high temperature protective coatings or barrier layers for prevention of electrode/electrolyte degradation

REFERENCE COUNT: 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 20 OF 36 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2003:138415 CAPLUS <<LOGINID::20080904>>
DOCUMENT NUMBER: 138:393429
TITLE: Ion transport in silica nanocomposite electrolytes
AUTHOR(S): Walls, H. J.; Fedkiw, Peter S.; Zawodzinski, Thomas A., Jr.; Khan, Saad A.
CORPORATE SOURCE: Department of Chemical Engineering, North Carolina State University, Raleigh, NC, 27695-7905, USA
SOURCE: Journal of the Electrochemical Society (2003), 150(3), E165-E174
CODEN: JESOAN; ISSN: 0013-4651
PUBLISHER: Electrochemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English

IT Ionic conductivity
(ion Transport in Silica Nanocomposite Electrolytes)
IT Electrolytes
Nanocomposites
(ion transport in silica nanocomposite electrolytes)
IT Transport properties
(ionic; ion Transport in Silica Nanocomposite Electrolytes)
IT 7631-86-9, Silica, processes
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process)
(ion transport in silica nanocomposite electrolytes)
IT 90076-65-6
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process)
(ion-transport in composite electrolytes from oligomeric poly(ethylene glycol) di-Me ether, hydrophobic fumed silica, and Li(CF3SO2)2N)
IT 24991-55-7
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process)
(oligomeric; ion transport in composite electrolytes from oligomers of poly(ethylene glycol) di-Me ether, hydrophobic fumed silica, and Li(CF3SO2)2N)

AB The ion-transport properties of composite electrolytes composed of oligomers of poly(ethylene glycol) di-Me ether, hydrophobic fumed silica, and Li(CF3SO2)2N (LiTFSI) are investigated using NMR, electrophoretic NMR (ENMR), a.c. impedance spectroscopy, and rheol. The effects of fumed silica and salt concentration on ionic conductivity, diffusivity of ions and oligomers, and lithium transference number (TLi) are examined at 30°. The fumed silica forms a self-supporting network with large pores such that the network, regardless of silica concentration, has little effect on ion-transport characteristics. Examination of the effect of salt on ion transport reveals a maximum ionic conductivity at around 1.06M, which is attributed to a tradeoff of adding more charge carriers balanced against increased ion-ion interactions and reduced mobilities. TLi with respect to salt concentration surprisingly passes through a min. around 0.35M. The increase in TLi at higher concns. is attributed to the mobilities of cations, anions, and solvating oligomer becoming constrained to the same

value due to "loss of free volume". The values of TLi at low salt concns. (<0.35M) are attributed to the ions existing in either a fully dissociated state or primarily as charged complexes. Results of TLi from ENMR and from estimation via pulse field gradient NMR (pfg-NMR) are compared showing that pfg-NMR consistently overests. TLi. Finally, a comparison is presented of measured conductivity with that calculated from the Nernst-Einstein
equation and diffusivities found from pfg-NMR measurement; the authors discuss possible reasons why it is inappropriate to estimate ion-pair formation by this comparison.
REFERENCE COUNT: 58 THERE ARE 58 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 21 OF 36 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2002:762947 CAPLUS <<LOGINID::20080904>>
DOCUMENT NUMBER: 138:43090
TITLE: Application of electrophoretic and electrolytic deposition techniques in ceramics processing
AUTHOR(S): Boccaccini, Aldo R.; Zhitomirsky, Igor
CORPORATE SOURCE: Department of Materials, Imperial College of Science, Technology and Medicine, London, SW7 2BP, UK
SOURCE: Current Opinion in Solid State & Materials Science (2002), 6(3), 251-260
CODEN: COSSFX; ISSN: 1359-0286
PUBLISHER: Elsevier Science Ltd.
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English
IT Films
(ceramic; electrophoretic and electrolytic deposition techniques in ceramics processing for fuel cell components, composites and coatings)
IT Ceramic coatings
Electrodeposition
Electrophoretic deposition
Fuel cell electrodes
(electrophoretic and electrolytic deposition techniques in ceramics processing for fuel cell components, composites and coatings)
IT Ceramics
(fiber-reinforced; electrophoretic and electrolytic deposition techniques in ceramics processing for fuel cell components, composites and coatings)
IT Ceramics
(films; electrophoretic and electrolytic deposition techniques in ceramics processing for fuel cell components, composites and coatings)
IT Fuel cells
(solid electrolyte, solid oxide fuel cell; electrophoretic and electrolytic deposition techniques in ceramics processing for fuel cell components, composites and coatings)
AB A review. Electrodeposition is gaining increasing interest as a ceramic processing technique for a variety of tech. applications. Major advances in the areas of electrophoretic deposition (EPD) and electrolytic deposition (ELD) achieved in the last 24 mo include the fabrication of: electrodes and films for solid oxide fuel cells, fiber-reinforced and graded ceramic composites, nanostructured materials as well as a variety of advanced films and coatings for electronic, biomedical, optical, catalytic and electrochem. applications.
REFERENCE COUNT: 88 THERE ARE 88 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 22 OF 36 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2002:579666 CAPLUS <<LOGINID::20080904>>
DOCUMENT NUMBER: 137:171600
TITLE: Sedimentation, electrophoresis, and electric conduction in suspensions of charged composite particles
AUTHOR(S): Keh, Huan J.
CORPORATE SOURCE: Department of Chemical Engineering, National Taiwan University, Taipei, 10617, Taiwan
SOURCE: Guoli Taiwan Daxue Gongcheng Xuekan (2002), 84, 59-66
CODEN: KTHKA4; ISSN: 0496-7194
PUBLISHER: National Taiwan University
DOCUMENT TYPE: Journal
LANGUAGE: English
IT Onsager reciprocal relation
(Onsager reciprocal relation in sedimentation and electrophoresis and elec. conduction in suspensions of charged composite particles)
IT Colloids
Electric conductivity
Electrophoresis
Particles
Sedimentation (separation)
Suspensions
(sedimentation and electrophoresis and elec. conduction in suspensions of charged composite particles)
AB The sedimentation and electrophoresis of a charged composite particle composed of a solid core and a surrounding porous shell in an electrolyte solution were anal. studied. In the solvent-permeable and ion-penetrable porous surface layer of the particle, idealized hydrodynamic frictional segments with fixed charges are assumed to distribute at a uniform d. The equations which govern the ionic concentration distributions, the electrostatic potential profile, and the fluid flow field inside and outside the surface layer of a charged composite particle migrating in an unbounded solution are linearized assuming that the system is only slightly distorted from equilibrium Using a perturbation method, these linearized equations are solved for a composite sphere with the charge densities of the rigid core surface and of the surface layer as the small perturbation parameters. Anal. expressions for the settling velocity and electrophoretic mobility of the composite sphere in closed form were obtained from a balance among its hydrodynamic, electrostatic, and/or gravitational forces. The results demonstrate that the presence of the fixed charges in the composite sphere is to slow down its settling velocity relative to that of an uncharged one. Closed-form formulas for the sedimentation potential and effective elec. conductivity of a dilute suspension of identical charged composite spheres were also derived by using the result for the average elec. current. The Onsager reciprocal relation is satisfied between sedimentation and electrophoresis. The presence of the fixed charges in the composite particles can lead to an augmented or a diminished elec. conductivity of the suspension relative to that of a corresponding suspension of uncharged composite particles, depending on the characteristics of the electrolyte solution and the suspending particles. In the limiting cases, the anal. solns. describing the sedimentation velocity, sedimentation potential, electrophoretic mobility, and effective elec. conductivity of a dilute suspension of charged composite spheres reduce to those for dilute suspensions of charged solid spheres and of charged porous spheres.
REFERENCE COUNT: 61 THERE ARE 61 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 23 OF 36 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2001:522679 CAPLUS <<LOGINID::20080904>>
DOCUMENT NUMBER: 135:110783
TITLE: Electrokinetic properties of nanosized SiC particles in highly concentrated electrolyte solutions
AUTHOR(S): Wang, Sheng-Chang; Wei, Wen-Cheng J.; Bergstrom, L.
CORPORATE SOURCE: Institute of Materials Science and Engineering, National Taiwan University, Taipei, 106, Taiwan
SOURCE: Journal of the American Ceramic Society (2001), 84(7), 1411-1414
CODEN: JACTAW; ISSN: 0002-7820
PUBLISHER: American Ceramic Society
DOCUMENT TYPE: Journal
LANGUAGE: English
IT Slurries
(ceramic; electrokinetic properties of nanosized SiC particles in highly concentrated electrolyte solns. for electroplating)
IT Adsorption
Electrodeposition
Electrokinetic phenomena
Electrolytic solutions
Electrophoresis
Nanoparticles
Streaming potential
Surface potential
Zeta potential
(electrokinetic properties of nanosized SiC particles in highly concentrated electrolyte solns. for electroplating)
IT Ceramics
(slurries; electrokinetic properties of nanosized SiC particles in highly concentrated electrolyte solns. for electroplating)
IT 409-21-2, Silicon carbide (SiC), processes
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
(electrokinetic properties of nanosized SiC particles in highly concentrated electrolyte solns. for electroplating)
IT 7718-54-9, Nickel chloride, processes 13770-89-3, Nickel sulfamate 65415-97-6, Cobalt sodium nitrite (CoNa3(NO2)6)
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(electrokinetic properties of nanosized SiC particles in highly concentrated electrolyte solns. for electroplating)
AB In this research, the electrokinetic behavior and stability of nanosized SiC particles suspended in various electroplating solns. were studied. Analyses were performed using electrophoretic mobility photometry and streaming current (SC) techniques. The electrolytes included NiCl2, Ni(SO3NH2)2, and Na3Co(NO2)6, which are currently used in composite plating solns. with concns. as high as 0.5M. The results showed that the adsorption of dissolved Ni2+ ions onto the surface of the SiC in the pH range 4-8 changed the sign and magnitude of the surface potential. Moreover, trivalent complex species Co(NO2)63- replaced nickel species on the SiC surface and decreased the surface charge of SiC to between pH 3 and pH 5. Even in a highly concentrated electrolyte solution, the SiC particles still maintained a pos. charge in a Ni(SO3NH2)2 suspension with nickel coplating on the cathode. The difference between the SC reading and the zeta potential, as well as the surface adsorption of various species onto the SiC, are discussed here.
REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 24 OF 36 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2001:257342 CAPLUS <<LOGINID::20080904>>
DOCUMENT NUMBER: 134:330281
TITLE: Elaboration and properties of TiO2-ZnAl2O4 ultrafiltration membranes
AUTHOR(S): Elmarraki, Y.; Cretin, M.; Persin, M.; Sarrazin, J.; Larbot, A.
CORPORATE SOURCE: Institut Europeen des Membranes, LMPM, UMR 5635 (CNRS-ENSCM-UM II) CNRS 1919, Montpellier, F34293, Fr.
SOURCE: Materials Research Bulletin (2001), 36(1-2), 227-237 CODEN: MRBUAC; ISSN: 0025-5408
PUBLISHER: Elsevier Science Inc.
DOCUMENT TYPE: Journal
LANGUAGE: English

IT Electrophoresis
Pore size
Pore size distribution
Sol-gel processing
Surface area
(sol-gel preparation and properties of TiO2-ZnAl2O4 composite powders and ultrafiltration membranes)

IT Zeta potential
(suspension electrolyte; sol-gel preparation and properties of TiO2-ZnAl2O4 composite powders and ultrafiltration membranes)

IT Ultrafilters
(titania-zinc aluminate composite; sol-gel preparation and properties of TiO2-ZnAl2O4 composite powders and ultrafiltration membranes)

IT Ceramic composites
(titania-zinc aluminate, membranes; sol-gel preparation and properties of TiO2-ZnAl2O4 composite powders and ultrafiltration membranes)

IT 12068-53-0P, Aluminum zinc oxide (Al2ZnO4) 13463-67-7P, Titanium oxide (TiO2), preparation
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); PROC (Process); USES (Uses)
(ceramic composites, ultrafiltration membranes; sol-gel preparation and properties of TiO2-ZnAl2O4 composite powders and ultrafiltration membranes)

IT 1318-23-6, Boehmite 7779-88-6, Zinc nitrate
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(precursor; sol-gel preparation and properties of TiO2-ZnAl2O4 composite powders and ultrafiltration membranes)

IT 546-68-9, Titanium tetraisopropoxide
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(sol-gel preparation and properties of TiO2-ZnAl2O4 composite powders and ultrafiltration membranes)

IT 7647-14-5, Sodium chloride, processes 7757-82-6, Sodium sulfate, processes 7778-18-9, Calcium sulfate 10043-52-4, Calcium chloride, processes
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(suspension electrolyte; effects of electrolyte on electrophoretic behavior TiO2-ZnAl2O4 composite powders and ultrafiltration membranes)

AB New ceramic ultrafiltration membranes with a pore size diameter in the range of 6 nm have been prepared by sol gel route using TiO2 and ZnAl2O4 mixed sols. The main characteristics of the membranes are given and their filtering properties discussed by taking into account of the electrophoretic behavior of powder suspension elaborated with the different sols used for the membrane preparation As for other membrane materials, the salt rejection rate depends mainly on the surface charge of the material which is correlated to the ζ potential.

REFERENCE COUNT: 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS

L1 ANSWER 25 OF 36 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2001:150757 CAPLUS <<LOGINID::20080904>>
DOCUMENT NUMBER: 134:226148
TITLE: Preparation of yttria-stabilized zirconia (YSZ) films on La0.85Sr0.15MnO3 (LSM) and LSM-YSZ substrates using an electrophoretic deposition (EPD) process
AUTHOR(S): Chen, Fanglin; Liu, Meilin
CORPORATE SOURCE: School of Materials Science and Engineering, Georgia Institute of Technology, Atlanta, GA, 30332, USA
SOURCE: Journal of the European Ceramic Society (2001), 21(2), 127-134
CODEN: JECSER; ISSN: 0955-2219
PUBLISHER: Elsevier Science Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English

IT Electrophoretic deposition
(electrophoretic deposition and properties of yttria-stabilized zirconia films on La0.85Sr0.15MnO3 substrates)

IT Electrodes
(lanthanum strontium manganate and composites with zirconia; electrophoretic deposition and properties of yttria-stabilized zirconia films on La0.85Sr0.15MnO3 substrates)

IT Ceramic composites
(lanthanum strontium manganate-zirconia electrodes; electrophoretic deposition and properties of yttria-stabilized zirconia films on La0.85Sr0.15MnO3 substrates)

IT Solid electrolytes
(zirconia; electrophoretic deposition and properties of yttria-stabilized zirconia films on La0.85Sr0.15MnO3 substrates)

IT 7553-56-2, Iodine, uses
RL: MOA (Modifier or additive use); USES (Uses)
(effects of I2 suspension addition on electrophoretic deposition and properties of yttria-stabilized zirconia films on La0.85Sr0.15MnO3 substrates)

IT 120605-82-5, Lanthanum manganese strontium oxide La0.85MnSr0.15O3
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(electrode; electrophoretic deposition and properties of yttria-stabilized zirconia films on La0.85Sr0.15MnO3 substrates)

IT 1314-23-4, Zirconium oxide (ZrO2), processes 114168-16-0, Tz8y
RL: PEP (Physical, engineering or chemical process); PRP (Properties); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(films; electrophoretic deposition and properties of yttria-stabilized zirconia films on La0.85Sr0.15MnO3 substrates)

IT 64-17-5, Ethanol, uses 67-64-1, Acetone, uses 123-54-6, Acetylacetone, uses
RL: MOA (Modifier or additive use); USES (Uses)
(solvent; effects of solvent on electrophoretic deposition and properties of yttria-stabilized zirconia films on La0.85Sr0.15MnO3 substrates)

AB Preparation of high-quality yttria-stabilized zirconia (YSZ) electrolyte films on porous substrates is critical to the fabrication of high-performance solid-state ionic devices such as fuel cells and gas sensors. An electrophoretic deposition (EPD) process is investigated for the preparation of YSZ electrolyte films on both porous La0.85Sr0.15MnO3 (LSM) and porous LSM-YSZ composite substrates. The Pechini process is used for the preparation of fine LSM powders with an average particle
size of about 0.1 μm. The processing parameters critically influencing

the microstructures of green YSZ films are identified and optimized to obtain uniform, crack-free green YSZ films with high packing d. of fine YSZ particles. Dense YSZ films with a thickness of about 10 μm have been successfully fabricated on both porous LSM and porous LSM-YSZ substrates when sintered at 1250°C for 2 h.

REFERENCE COUNT: 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 26 OF 36 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2000:445436 CAPLUS <<LOGINID::20080904>>

DOCUMENT NUMBER: 133:177764

TITLE: Anion and cation transference numbers determined by electrophoretic NMR of polymer electrolytes sum to unity

AUTHOR(S): Walls, H. J.; Zawodzinski, T. A., Jr.

CORPORATE SOURCE: Department of Chemical Engineering, North Carolina State University, Raleigh, NC, 27695-7905, USA

SOURCE: Electrochemical and Solid-State Letters (2000), 3(7), 321-324
CODEN: ESLEF6; ISSN: 1099-0062

PUBLISHER: Electrochemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

IT Anions
Cations
Electric conductivity
Polymer electrolytes
Transference number
(anion and cation transference nos. determined by electrophoretic NMR of polymer electrolytes sum to unity)

IT NMR spectroscopy
(fluorine-19; anion and cation transference nos. determined by electrophoretic NMR of polymer electrolytes sum to unity)

IT NMR spectroscopy
(lithium-7; anion and cation transference nos. determined by electrophoretic NMR of polymer electrolytes sum to unity)

IT 7631-86-9, Silica, uses
RL: MOA (Modifier or additive use); USES (Uses)
(amorphous, fumed, polymer electrolytes containing; anion and cation transference nos. determined by electrophoretic NMR of polymer electrolytes sum to unity)

IT 33454-82-9, Lithium triflate 90076-65-6, Lithium bis(trifluoromethanesulfonyl)imide 132404-42-3
RL: PRP (Properties)
(anion and cation transference nos. determined by electrophoretic NMR of polymer electrolytes sum to unity)

IT 24991-55-7, Poly(ethylene glycol) dimethyl ether
RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(anion and cation transference nos. determined by electrophoretic NMR of polymer electrolytes sum to unity)

IT 112153-70-5, Aerosil R 805
RL: MOA (Modifier or additive use); USES (Uses)
(polymer electrolytes containing; anion and cation transference nos. determined by electrophoretic NMR of polymer electrolytes sum to unity)

AB The lithium ion transference number (TLi) and anion transference number (TF) were determined for composite polymer electrolytes based on ethylene oxide (250 Mn) and hydrophobic fumed silica. These transference nos. were measured using electrophoretic NMR (ENMR), which essentially is a rapid Hittorf method. We demonstrated the validity and

power of the ENMR technique by independently measuring both T+ and T- for a single sample and showed that T+ + T- = 1 (within exptl. error). Measurement of TF is typically easier and more accurate than measurement of TLi, ENMR is a powerful technique for characterizing polymer electrolytes without the need for assumptions, such as treatment of the electrolyte as an ideal solution, or for multiple measurements and regressions, as required by methods based on concentrated solution theory.
REFERENCE COUNT: 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 27 OF 36 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2000:398863 CAPLUS <<LOGINID::20080904>>
DOCUMENT NUMBER: 133:61295
TITLE: Ionic transport in ethylene oxide-based inorganic/organic composite electrolytes
AUTHOR(S): Walls, H. J.; Fedkiw, Peter S.; Khan, Saad A.; Zawodzinski, Thomas A., Jr.
CORPORATE SOURCE: Department of Chemical Engineering, North Carolina State University, Raleigh, NC, 27695-7905, USA
SOURCE: Proceedings - Electrochemical Society (2000), 99-25, 524-533
CODEN: PESODO; ISSN: 0161-6374
PUBLISHER: Electrochemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
IT Diffusion
Ionic conductivity
Transference number
(ionic transport in ethylene oxide-based inorg./organic composite electrolytes)
IT 7631-86-9, Silica, uses
RL: DEV (Device component use); USES (Uses)
(colloidal; ionic transport in ethylene oxide-based inorg./organic composite electrolytes)
IT 24991-55-7, Polyethylene glycol dimethyl ether 33454-82-9, Lithium triflate 90076-65-6, Lithium bis(trifluoromethanesulfonyl)imide 132404-42-3, Lithium tris(trifluoromethanesulfonyl)methide
RL: DEV (Device component use); USES (Uses)
(ionic transport in ethylene oxide-based inorg./organic composite electrolytes)
AB We have previously described composite polymer electrolytes based on poly(ethylene glycol) di-Me ether, lithium salt, and an inorg. filler, fumed silica. These composite polymer electrolytes exhibit high room-temperature conductivities (>10-3 S/cm) and mech. stability. In this communication we further describe the ionic transport properties focusing on the effect of filler content and lithium salt concentration Fumed silica content does not impede diffusion of the cation or anion as measured by pulse field gradient NMR (pfg-NMR). Charge transport due to lithium ions, i.e., the lithium transference number (TLi), is also independent of the filler content. Ionic conductivity increases with salt concentration but the ion self-diffusion coeffs. and
TLi decrease. The implications of these effects are discussed. The measurement of anion transference nos. via observation of the 19F in the anion (TF) using electrophoretic NMR (ENMR) is also included. The power and validity of ENMR is demonstrated by independent measurements of TLi and TF for three salts, these transference nos. sum to unity (within exptl. error).
REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 28 OF 36 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1999:213883 CAPLUS <<LOGINID::20080904>>
DOCUMENT NUMBER: 131:5905
TITLE: Lithium ion transport in polymer, gel and composite electrolytes
AUTHOR(S): Londergan, C.; Han, A.; Dai, H.; Davey, J.; Zawodzinski, T.
CORPORATE SOURCE: Materials Science Division, Los Alamos National Laboratory, Los Alamos, NM, 87545, USA
SOURCE: Polymeric Materials Science and Engineering (1999), 80, 617
CODEN: PMSEDG; ISSN: 0743-0515
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
IT Polyoxyalkylenes, properties
RL: PRP (Properties)
(lithium complexes, trifluoromethylsulfonylimide counter ion; lithium ion transport in PEO-Li salt polymer and gel and composite electrolytes)
IT Ionic conductivity
Polymer electrolytes
Transference number
(lithium ion transport in PEO-Li salt polymer and gel and composite electrolytes)
IT Polyoxyalkylenes, properties
RL: PRP (Properties)
(lithium trifluoromethylsulfonylimide; lithium ion transport in PEO-Li salt polymer and gel and composite electrolytes)
IT Electric current carriers
(transport, ion; lithium ion transport in PEO-Li salt polymer and gel and composite electrolytes)
IT 9011-17-0, Hexafluoropropene-vinylidene fluoride copolymer
RL: PRP (Properties)
(gel, Kynar; lithium ion transport in PEO-Li salt polymer and gel and composite electrolytes)
IT 25014-41-9, Poly(acrylonitrile)
RL: PRP (Properties)
(gel; lithium ion transport in PEO-Li salt polymer and gel and composite electrolytes)
IT 90076-65-6, Lithium bis(trifluoromethylsulfonyl) imide
RL: PRP (Properties)
(lithium ion transport in PEO-Li salt polymer and gel and composite electrolytes)
IT 7439-93-2D, Lithium, PEO complexes, properties 25322-68-3D, PEO, lithium complexes
RL: PRP (Properties)
(trifluoromethylsulfonylimide counter ion; lithium ion transport in PEO-Li salt polymer and gel and composite electrolytes)
AB A conceptually simple and rapid method was developed for transference number measurements termed the electrophoretic NMR (ENMR) method, for studies of solid polymer and gel electrolytes. The method is illustrated with measurements of Li transport (TLi) for PEO/LiTFSI (TFSI = bis(trifluoromethylsulfonyl) imide) systems. The measured TLi for PEO x LiTFSI electrolytes is quite low, 0-0.06 for composition ratio (Li:O) 1:6 to 1:200. This result is in general agreement with the Hittorf measurements of C. A. Vincent et al. (1989) for PEO/LiClO4 systems and with those of Olsen at al. for gels based on crosslinked oxyethylene oligomers. For gel electrolytes (Hexafluoropropene–vinylidene fluoride copolymer, Kynar, and

PAN), the dependence of TLi on salt type and concentration, temperature, polymer type,
solvent etc., was also determined
REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 29 OF 36 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1999:93752 CAPLUS <<LOGINID::20080904>>
TITLE: Lithium ion transport in polymer, gel and composite electrolytes
AUTHOR(S): Londergan, Casey H.; Han, Andrew Y.; Dai, Hongli; Davey, John R.; Zawodzinski, Thomas A., Jr.
CORPORATE SOURCE: Materials Science Division, Los Alamos National Laboratory, Los Alamos, NM, 87545, USA
SOURCE: Book of Abstracts, 217th ACS National Meeting, Anaheim, Calif., March 21-25 (1999), PMSE-381. American Chemical Society: Washington, D. C. CODEN: 67GHA6
DOCUMENT TYPE: Conference; Meeting Abstract
LANGUAGE: English
AB We have deployed a conceptually simple and rapid method for transference number measurement, the Electrophoretic NMR (ENMR) method. We will describe the method and studies of solid polymer and gel electrolytes. We measured the TLi for PEO/LiTFSI systems. The measured TLi for PEOxLiTFSI electrolytes is quite low, varying over the range 0-0.06 over the composition range (Li:O) 1:6 to 1:200. This result is in general agreement with the Hittorf measurements of Vincent et al. for PEO/LiClO4 systems and with those of Olsen at al. for gels based on cross-linked oxyethylene oligomers. In gel electrolytes, we have determined the dependence of TLi on salt type and concentration, temperature, polymer type, solvent etc. Finally, we are
deploying NMR and other methods to estimate the transport properties in composite systems such as inorg./organic composite electrolytes and electrodes.

L1 ANSWER 30 OF 36 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1998:781415 CAPLUS <<LOGINID::20080904>>
DOCUMENT NUMBER: 130:104386
TITLE: High temperature pH sensing and O2- conduction properties of electrophoretically fabricated ceria composites
AUTHOR(S): Hamagami, Jun-ichi; Inda, Yasushi; Umegaki, Takao; Yamashita, Kimihiro
CORPORATE SOURCE: Department of Industrial Chemistry, Tokyo Metropolitan University, Hachioji, Tokyo, 192-03, Japan
SOURCE: Solid State Ionics (1998), 113-115, 235-239 CODEN: SSIOD3; ISSN: 0167-2738
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English
IT Sensors
(electrochem.; high temperature pH sensing and O2- conduction properties of electrophoretically fabricated ceria composites)
IT Ceramic composites
Electrophoretic deposition
Fuel cell electrolytes
Ionic conductivity
Solid state fuel cells
pH
(high temperature pH sensing and O2- conduction properties of electrophoretically fabricated ceria composites)

IT Gas sensors
(oxygen; high temperature pH sensing and O2- conduction properties of electrophoretically fabricated ceria composites)
IT 1314-36-9, Yttria, uses
RL: DEV (Device component use); USES (Uses)
(ZrO2 stabilized with; high temperature pH sensing and O2- conduction properties of electrophoretically fabricated ceria composites)
IT 12060-58-1, Samaria
RL: DEV (Device component use); USES (Uses)
(ceria doped with; high temperature pH sensing and O2- conduction properties of electrophoretically fabricated ceria composites)
IT 7782-44-7, Oxygen, analysis
RL: ANT (Analyte); ANST (Analytical study)
(high temperature pH sensing and O2- conduction properties of electrophoretically fabricated ceria composites)
IT 114168-16-0, Tz-8y 130556-23-9, Cerium samarium oxide Ce0.9Sm0.2O2.1
RL: DEV (Device component use); USES (Uses)
(high temperature pH sensing and O2- conduction properties of electrophoretically fabricated ceria composites)
IT 1306-38-3, Ceria, uses
RL: DEV (Device component use); USES (Uses)
(samaria-doped; high temperature pH sensing and O2- conduction properties of electrophoretically fabricated ceria composites)
IT 1314-23-4, Zirconia, uses
RL: DEV (Device component use); USES (Uses)
(yttria-stabilized; high temperature pH sensing and O2- conduction properties
of electrophoretically fabricated ceria composites)
AB Sm2O3-doped ceria (SC) ceramics, in which an yttria-stabilized zirconia (YSZ) thin layer of 2 μm in thickness was inserted, was fabricated by the electrophoretic lamination method followed by sintering. The pH sensing properties of the SC/YSZ/SC composite ceramics were examined: the result indicated an approx. Nernstian response of -65.3 mV/pH and the response time of within 50 s at 353 K. The electrolytic properties of SC/YSZ/SC composites were also studied using solid oxide fuel cells and oxygen sensors.
REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 31 OF 36 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1997:790150 CAPLUS <<LOGINID::20080904>>
DOCUMENT NUMBER: 128:145793
ORIGINAL REFERENCE NO.: 128:28589a,28592a
TITLE: Sedimentation velocity and potential in a dilute suspension of charged composite spheres
AUTHOR(S): Keh, Huan J.; Liu, Yung C.
CORPORATE SOURCE: Department of Chemical Engineering, National Taiwan University, Taipei, 106-17, Taiwan
SOURCE: Journal of Colloid and Interface Science (1997), 195(1), 169-191
CODEN: JCISA5; ISSN: 0021-9797
PUBLISHER: Academic Press
DOCUMENT TYPE: Journal
LANGUAGE: English
IT Charged particles
Composites
Electric potential
Electrophoresis
Sedimentation (separation)
Sols

(sedimentation velocity and potential in a dilute suspension of charged composite spheres)

IT Particles
(spherical; sedimentation velocity and potential in a dilute suspension of charged composite spheres)

AB The sedimentation of a charged composite particle composed of a solid core and a surrounding porous shell in an electrolyte solution is anal. studied. In the solvent-permeable and ion-penetrable porous surface layer of the particle, idealized hydrodynamic frictional segments with fixed charges are assumed to distribute at a uniform d. The equations which govern the ionic concentration distributions, the elec. potential profile, and the fluid flow field inside and outside the surface layer of a charged composite particle migrating in an unbounded solution are linearized assuming that the system is only slightly distorted from equilibrium Using a perturbation method, these linearized equations are solved for a composite sphere with the charge densities of the rigid core surface and of the surface layer as the small perturbation parameters. An anal. expression for the settling velocity of the composite sphere in closed form is obtained from a balance among its gravitational, electrostatic, and hydrodynamic forces. The result demonstrates that the presence of the fixed charges in the composite sphere slows down its settling velocity relative to that of an uncharged one. A closed-form formula for the sedimentation potential in a dilute suspension of identical charged composite spheres is also derived by using the requirement of zero net elec. current. The Onsager reciprocal relation is found to be satisfied between sedimentation and electrophoresis. It is shown that spherically-sym. "neutral" composite particles (bearing no net charge) can undergo electrophoresis induce sedimentation potential, and experience a smaller settling velocity relative to corresponding uncharged particles. The direction of the electrophoretic velocity or the induced potential gradient is determined by the fixed charges in the porous surface layers of the particles. In the limiting cases, the anal. solns. describing the sedimentation velocity and sedimentation potential (or electrophoretic mobility) for charged composite spheres reduce to those for charged solid spheres.

REFERENCE COUNT: 33 THERE ARE 33 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 32 OF 36 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1996:527046 CAPLUS <<LOGINID::20080904>>
DOCUMENT NUMBER: 125:252892
ORIGINAL REFERENCE NO.: 125:47166h,47167a
TITLE: Development of electrophoretic coating for the manufacturing of thin electrolyte layers
AUTHOR(S): Hruschka, Martin
CORPORATE SOURCE: Inst. Werkstoffe Energietech., Forschungszent. Juelich G.m.b.H. Juelich, DE, D-52425, USA
SOURCE: Berichte des Forschungszentrums Juelich (1996), Juel-3221, 1-137 pp.
CODEN: FJBEE5; ISSN: 0366-0885
DOCUMENT TYPE: Report
LANGUAGE: German

IT Electrodeposits and Electroplates
(electrophoretic coating for manufacturing of thin electrolyte layers for fuel cells)

IT Electrodeposition and Electroplating
(electrophoretic; electrophoretic coating for manufacturing of thin electrolyte layers for fuel cells)

IT Fuel-cell electrolytes
(solid oxide; electrophoretic coating in manufacture of thin

electrolyte layers for fuel cells)
IT 9002-98-6, Polyethylenimine 9003-01-4, Polyacrylic acid
RL: MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(additive; electrophoretic coating in manufacture of thin electrolyte layers for fuel cells)
IT 1313-99-1, Nickel oxide (NiO), uses 7440-02-0, Nickel, uses
177739-22-9, Yttrium zirconium oxide (Y0.15Zr0.85O2)
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(electrophoretic coating in manufacture of thin electrolyte layers for fuel cells)
AB Process steps for the manufacture of thin gas-tight electrolyte layers for solid oxide fuel cells (SOFC) include precipitation of electrolyte powder and the generation of a homogeneous field to avoid defective substrate surfaces during coating. Requirements for surface structure, pore size distribution, porosity, microstructure, elec. conductivity, and shrinkage behavior of anode substrates were studied, and possibilities of adaptation and optimization are proposed. Final sintering of layered substrate composite was effected by cofiring, resulting in planar composites with gastight electrolyte layers. Possibilities and limits in the application of the new electrophoretic coating are discussed.

L1 ANSWER 33 OF 36 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1994:301177 CAPLUS <<LOGINID::20080904>>
DOCUMENT NUMBER: 120:301177
ORIGINAL REFERENCE NO.: 120:53023a,53026a
TITLE: Electrophoretic composite coatings from a modified oligomeric electrolyte
AUTHOR(S): Rynda, E. F.; Tertykh, L. I.
CORPORATE SOURCE: USSR
SOURCE: sovrem. Lakokrasoch. Mater. i Tekhn. Okrashivaniya: Mater. Semin. O-vo "Znanie" RSFSR, Tsentr. Ros. Dom Znanii, M. (1991) 14-17
From: Ref. Zh., Khim. 1992, Abstr. No. 11U136
DOCUMENT TYPE: Journal
LANGUAGE: Russian
IT Electrodeposits and Electroplates
(from modified oligomeric electrolyte)
IT Polyelectrolytes
(oligomeric, modified, electrophoretic composite coatings from)
AB Title only translated.

L1 ANSWER 34 OF 36 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1992:110092 CAPLUS <<LOGINID::20080904>>
DOCUMENT NUMBER: 116:110092
ORIGINAL REFERENCE NO.: 116:18587a,18590a
TITLE: Composite ion-conductive electrolyte member for high-temperature batteries
INVENTOR(S): Prince, Lawrence S.; Higley, Lin R.
PATENT ASSIGNEE(S): Hughes Aircraft Co., USA
SOURCE: U.S., 7 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| US 5059497 | A | 19911022 | US 1990-512222 | 19900420 |
| CA 2038707 | A1 | 19911021 | CA 1991-2038707 | 19910320 |
| CA 2038707 | C | 19940920 | | |
| AU 9173659 | A | 19911024 | AU 1991-73659 | 19910321 |
| AU 625022 | B2 | 19920625 | | |
| IL 97636 | A | 19981206 | IL 1991-97636 | 19910321 |
| EP 453796 | A2 | 19911030 | EP 1991-104788 | 19910326 |
| EP 453796 | A3 | 19920108 | | |
| EP 453796 | B1 | 19950906 | | |
| R: BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, NL, SE | | | | |
| BR 9101432 | A | 19911126 | BR 1991-1432 | 19910410 |
| NO 9101468 | A | 19911021 | NO 1991-1468 | 19910415 |
| JP 04230957 | A | 19920819 | JP 1991-88607 | 19910419 |

PRIORITY APPLN. INFO.: US 1990-512222 A 19900420

IT Battery electrolytes
(composite, ion-conductive, high-temperature, composition of)

IT Glass, oxide
RL: USES (Uses)
(elec. conductive, ANL, electrolyte containing layer of, composite, for high-temperature batteries)

IT 13463-67-7, Titania, uses
RL: USES (Uses)
(electrolyte containing glass or polycryst. ceramic layer bonded to, for high-temperature batteries)

IT 12005-48-0
RL: USES (Uses)
(electrolyte containing titanium oxide layer bonded to, for high-temperature batteries)

AB The electrolyte member includes a 1st layer of an ion-conducting material (e.g., ANL glass or polycryst. β-alumina ceramics) and a 2nd layer of elec. conducting material (e.g., TiO2 and its suboxides), which is highly resistant to the anodic reactants and sufficiently porous to allow flow of anodic reactants to contact the 1st layer, where the 1st layer is in contact with the cathode and the 2nd layer is in contact with the anode. The 2 layers are preferably intimately bonded together by an electrophoretic, a chemical-vapor, a plasma-spraying, and a pyrolytic deposition process or a pressing and sintering process.

L1 ANSWER 35 OF 36 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1990:425583 CAPLUS <<LOGINID::20080904>>
DOCUMENT NUMBER: 113:25583
ORIGINAL REFERENCE NO.: 113:4441a,4444a
TITLE: Formation of electrophoretic composite coatings based on oligomeric electrolyte
AUTHOR(S): Tertykh, L. I.; Rynda, E. F.
CORPORATE SOURCE: USSR
SOURCE: Ekol. Polnotsen. Lakokrasoch. Mater.: Semin. O-vo "Znanie" RSFSR. Mosk. Dom Nauch. Tekhn. Prop., M. (1989) 37-41
From: Ref. Zh., Khim. 1990, Abstr. No. 1U106
DOCUMENT TYPE: Journal
LANGUAGE: Russian

IT Polyelectrolytes
(oligomeric, electrophoretic coatings based on)

IT Coating materials
(electrophoretic, oligomeric electrolyte-based)

AB Title only translated.

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L1   ANSWER 36 OF 36  CAPLUS  COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER:         1988:139598  CAPLUS <<LOGINID::20080904>>
DOCUMENT NUMBER:          108:139598
ORIGINAL REFERENCE NO.:   108:22771a,22774a
TITLE:                    Electrophoretic-electrochemical deposition
                          of polymers and metals
AUTHOR(S):                Deinega, Yu. F.; Ul'berg, Z. R.
CORPORATE SOURCE:         Inst. Kolloidn. Khim. Khim. Vody, Kiev, USSR
SOURCE:                   Uspekhi Khimii (1988), 57(1), 149-72
                          CODEN: USKHAB; ISSN: 0042-1308
DOCUMENT TYPE:            Journal; General Review
LANGUAGE:                 Russian
IT   Electrodeposition and Electroplating
        (composite, with polymers)
IT   Coating process
        (electrophoretic, of polymers in metal dispersion)
AB   A review with 100 refs. is given on the formation of composite
     polymeric and metalopolymer coating during electrodeposition of polymer
     dispersions in H2O and electrolyte solns.  The role of
     chemisorption interactions of polymers with colloidal metals is discussed.
     The appearance of the electrophoretic polarization and its
     influence on the electrode process is described.


=> d his

     (FILE 'HOME' ENTERED AT 14:54:31 ON 04 SEP 2008)

     FILE 'CAPLUS' ENTERED AT 14:54:43 ON 04 SEP 2008
L1           36 S ELECTROPHORET? AND (COMPOSITE (S) ELECTROLYTE)
L2            0 S L1 AND (FUEL ADJ CELL)

=> s electrodeposit? (s) electrolyte
        116581 ELECTRODEPOSIT?
             1 ELECTRODEPOS
             1 ELECTRODEPOS
                  (ELECTRODEPOS)
        116581 ELECTRODEPOSIT?
                  (ELECTRODEPOSIT? OR ELECTRODEPOS)
        277561 ELECTROLYTE
        143499 ELECTROLYTES
        332537 ELECTROLYTE
                  (ELECTROLYTE OR ELECTROLYTES)
L3        7196 ELECTRODEPOSIT? (S) ELECTROLYTE

=> s l3 and fuel cell
        445485 FUEL
        176826 FUELS
        499995 FUEL
                  (FUEL OR FUELS)
       2447702 CELL
       2109816 CELLS
       3199698 CELL
                  (CELL OR CELLS)
         88779 FUEL CELL
                  (FUEL(W)CELL)
L4          66 L3 AND FUEL CELL

=> d his

     (FILE 'HOME' ENTERED AT 14:54:31 ON 04 SEP 2008)
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     FILE 'CAPLUS' ENTERED AT 14:54:43 ON 04 SEP 2008
L1            36 S ELECTROPHORET? AND (COMPOSITE (S) ELECTROLYTE)
L2             0 S L1 AND (FUEL ADJ CELL)
L3          7196 S ELECTRODEPOSIT? (S) ELECTROLYTE
L4            66 S L3 AND FUEL CELL

=> s l4 and composite
        377577 COMPOSITE
        222085 COMPOSITES
        430700 COMPOSITE
                 (COMPOSITE OR COMPOSITES)
L5             9 L4 AND COMPOSITE

=> d 1-9 ibib ti ibib abs

L5   ANSWER 1 OF 9  CAPLUS  COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER:         2008:603129  CAPLUS <<LOGINID::20080904>>
DOCUMENT NUMBER:          148:565357
TITLE:                    Method of manufacturing of fuel element with solid
                          polymer electrolyte
INVENTOR(S):              Gofman, Ya. A.; Gavrilov, A. A.; Fomenko, N. S.;
                          Gavrilov, E. A.
PATENT ASSIGNEE(S):       Russia
SOURCE:                   Russ., 11pp.
                          CODEN: RUXXE7
DOCUMENT TYPE:            Patent
LANGUAGE:                 Russian
FAMILY ACC. NUM. COUNT:   1
PATENT INFORMATION:

     PATENT NO.          KIND   DATE        APPLICATION NO.         DATE
     --------------      ----   --------    --------------------    --------
     RU 2325012           C1    20080520    RU 2006-140229          20061114
PRIORITY APPLN. INFO.:                      RU 2006-140229          20061114
TI   Method of manufacturing of fuel element with solid polymer electrolyte
ACCESSION NUMBER:         2008:603129  CAPLUS <<LOGINID::20080904>>
DOCUMENT NUMBER:          148:565357
TITLE:                    Method of manufacturing of fuel element with solid
                          polymer electrolyte
INVENTOR(S):              Gofman, Ya. A.; Gavrilov, A. A.; Fomenko, N. S.;
                          Gavrilov, E. A.
PATENT ASSIGNEE(S):       Russia
SOURCE:                   Russ., 11pp.
                          CODEN: RUXXE7
DOCUMENT TYPE:            Patent
LANGUAGE:                 Russian
FAMILY ACC. NUM. COUNT:   1
PATENT INFORMATION:

     PATENT NO.          KIND   DATE        APPLICATION NO.         DATE
     --------------      ----   --------    --------------------    --------
     RU 2325012           C1    20080520    RU 2006-140229          20061114
PRIORITY APPLN. INFO.:                      RU 2006-140229          20061114
AB   The invention provides a fuel cell design.  The anodic
     and cathodic electrode layers are mounted on a grid substrate, the
     electrode layers within the integrated metal structure include porous
     electrode carriers, solid shunts of porous electrode carriers and leads to
     drain current from the electrode layer.  For that purpose, odd areas
     designed for electrode carriers are protected on the grid substrate with a
     thermoplastic film.  The grid substrate surface uncovered with film is
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copper and nickel plated to produce the solid shunts and the leads. The back surface of the electrode layers is rough copper deposit plated and then nickel plated that is corrosion-resistant for solid polymer electrolyte contact. One surface of the solid polymer electrolyte has a catalytic coating. Adhesive padding is formed on the surface of shunts and the lead of anodic electrode layer. Gaps correlating to the adhesive padding are cut in the film covering the solid polymer electrolyte. Surfaces of the cathodic electrode carriers have a catalytic coating consisting of a finely-dispersed metallic catalyst and a fluorocarbon polymer. The electrode/electrolyte/electrode layers are integrated and exposed to thermal pressing. The rough surface of electrode layers at that penetrates the film of solid polymer electrolyte, and corresponding shunts and leads of the two electrode layers are glued over. This design results in a fuel cell, supplied with minor
fuel cells in number equal to the electrode carriers of the electrode layer for both the anode and cathode. This design results in high performance and reliability of the fuel cell, as
well as a reduction of specific quantity of metal and productivity improvement of integrated layer-built structure of fuel element.

L5 ANSWER 2 OF 9 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2008:375426 CAPLUS <<LOGINID::20080904>>
DOCUMENT NUMBER: 148:359102
TITLE: Method for manufacture of metal-carbon fiber composites, polymer electrolyte fuel cell electrodes using them, and polymer electrolyte fuel cells
INVENTOR(S): Fukushima, Atsushi; Sugiyama, Hideo; Toyosawa, Shinichi; Sugi, Shinichiro
PATENT ASSIGNEE(S): Bridgestone Corp., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 11pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| JP 2008069494 | A | 20080327 | JP 2006-251324 | 20060915 |

PRIORITY APPLN. INFO.: JP 2006-251324 20060915
TI Method for manufacture of metal-carbon fiber composites, polymer electrolyte fuel cell electrodes using them, and polymer electrolyte fuel cells
ACCESSION NUMBER: 2008:375426 CAPLUS <<LOGINID::20080904>>
DOCUMENT NUMBER: 148:359102
TITLE: Method for manufacture of metal-carbon fiber composites, polymer electrolyte fuel cell electrodes using them, and polymer electrolyte fuel cells
INVENTOR(S): Fukushima, Atsushi; Sugiyama, Hideo; Toyosawa, Shinichi; Sugi, Shinichiro
PATENT ASSIGNEE(S): Bridgestone Corp., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 11pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |

| | | | | |
|---|---|---|---|---|
| JP 2008069494 | A | 20080327 | JP 2006-251324 | 20060915 |

PRIORITY APPLN. INFO.: JP 2006-251324 20060915

AB The method involves placing working and counter electrodes in solns. containing aromatic compds. and metal ions, applying voltage between the working and counter electrodes for electrooxidizing the aromatic compds. to give polymer fibrils and for electroplating metals on the polymer fibrils, and carbonizing the plated polymer fibrils to give metals uniformly supported on carbon fibers. Manufactured composites are also claimed. The electrodes have the composites and porous supports.

L5 ANSWER 3 OF 9 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2008:226287 CAPLUS <<LOGINID::20080904>>
DOCUMENT NUMBER: 148:263680
TITLE: Method for fabricating a composite solid polymer electrolyte membrane
INVENTOR(S): Wu, Gwo-Mei; Lin, Sheng-Jen; Yang, Chun-Chen; Chiu, Jiun-Ming
PATENT ASSIGNEE(S): Taiwan
SOURCE: U.S. Pat. Appl. Publ., 17pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| US 20080045616 | A1 | 20080221 | US 2007-623769 | 20070117 |

PRIORITY APPLN. INFO.: TW 2006-95129876 A 20060815

TI Method for fabricating a composite solid polymer electrolyte membrane

ACCESSION NUMBER: 2008:226287 CAPLUS <<LOGINID::20080904>>
DOCUMENT NUMBER: 148:263680
TITLE: Method for fabricating a composite solid polymer electrolyte membrane
INVENTOR(S): Wu, Gwo-Mei; Lin, Sheng-Jen; Yang, Chun-Chen; Chiu, Jiun-Ming
PATENT ASSIGNEE(S): Taiwan
SOURCE: U.S. Pat. Appl. Publ., 17pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| US 20080045616 | A1 | 20080221 | US 2007-623769 | 20070117 |

PRIORITY APPLN. INFO.: TW 2006-95129876 A 20060815

AB A composite solid polymer electrolyte membrane is produced by (a) washing and drying a membrane, and performing a sulfonation reaction on the membrane with sulfuric acid to obtain a sulfonated membrane, (b) washing and drying the sulfonated membrane, (c) obtaining a first polymer solution and a second polymer solution, and adding a basic aqueous solution into the second polymer solution to undertake a hydrolysis and neutralization reaction, (d) mixing the first polymer solution and the hydrolyzed and neutralized second polymer solution to obtain a blended polymer solution, (e) placing the sulfonated membrane into the blended polymer solution, and

sequentially adding a crosslinking agent and an initiator into a mixture of the sulfonated membrane and the blended polymer solution to undertake a polymerization reaction and obtain a blended polymer solution-containing sulfonated membrane, and (f) drying the blended polymer solution-containing sulfonated membrane on a flat surface to obtain a composite solid polymer electrolyte membrane. The method provides a composite solid polymer electrolyte membrane having improved ionic conductivity and mech. strength.

L5 ANSWER 4 OF 9 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2005:408893 CAPLUS <<LOGINID::20080904>>
DOCUMENT NUMBER: 142:449388
TITLE: System and a method for manufacturing an electrolyte using electro deposition
INVENTOR(S): Punsalan, David; Herman, Gregory; Mardilovich, Peter
PATENT ASSIGNEE(S): USA
SOURCE: U.S. Pat. Appl. Publ., 13 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| US 20050098438 | A1 | 20050512 | US 2003-705486 | 20031110 |
| PRIORITY APPLN. INFO.: | | | US 2003-705486 | 20031110 |

TI System and a method for manufacturing an electrolyte using electro deposition
ACCESSION NUMBER: 2005:408893 CAPLUS <<LOGINID::20080904>>
DOCUMENT NUMBER: 142:449388
TITLE: System and a method for manufacturing an electrolyte using electro deposition
INVENTOR(S): Punsalan, David; Herman, Gregory; Mardilovich, Peter
PATENT ASSIGNEE(S): USA
SOURCE: U.S. Pat. Appl. Publ., 13 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| US 20050098438 | A1 | 20050512 | US 2003-705486 | 20031110 |
| PRIORITY APPLN. INFO.: | | | US 2003-705486 | 20031110 |

AB A method of forming an electrolyte includes removably coupling a perimeter support to a temporary substrate, and electrodepositing an electrolyte composite film on the temporary substrate.

L5 ANSWER 5 OF 9 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2003:551052 CAPLUS <<LOGINID::20080904>>
DOCUMENT NUMBER: 139:87884
TITLE: Hollow inorganic membranes produced by metal or composite electrodeposition for solid oxide fuel cell applications
INVENTOR(S): Sarkar, Partho
PATENT ASSIGNEE(S): Alberta Research Council, Can.
SOURCE: U.S. Pat. Appl. Publ., 15 pp.

CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 6
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| US 20030134176 | A1 | 20030717 | US 2002-53241 | 20020116 |
| US 6846588 | B2 | 20050125 | | |
| US 20030134169 | A1 | 20030717 | US 2002-78548 | 20020214 |
| US 6824907 | B2 | 20041130 | | |
| US 20030134170 | A1 | 20030717 | US 2002-156755 | 20020523 |
| US 6936367 | B2 | 20050830 | | |
| US 20030134171 | A1 | 20030717 | US 2002-207668 | 20020725 |
| US 6893762 | B2 | 20050517 | | |
| CA 2472778 | A1 | 20030731 | CA 2003-2472778 | 20030116 |
| WO 2003062503 | A1 | 20030731 | WO 2003-CA59 | 20030116 |
| W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW | | | | |
| RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG | | | | |
| EP 1466040 | A1 | 20041013 | EP 2003-731643 | 20030116 |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK | | | | |
| JP 2005515610 | T | 20050526 | JP 2003-562363 | 20030116 |
| CN 1639391 | A | 20050713 | CN 2003-804586 | 20030116 |
| US 20060051643 | A1 | 20060309 | US 2005-522235 | 20050809 |

PRIORITY APPLN. INFO.:

| | | |
|---|---|---|
| US 2002-53241 | A2 | 20020116 |
| US 2002-78548 | A2 | 20020214 |
| US 2002-156755 | A2 | 20020523 |
| US 2002-207668 | A1 | 20020725 |
| WO 2003-CA59 | W | 20030116 |
| WO 2003-CA1118 | W | 20030724 |

TI Hollow inorganic membranes produced by metal or composite electrodeposition for solid oxide fuel cell applications

ACCESSION NUMBER: 2003:551052 CAPLUS <<LOGINID::20080904>>
DOCUMENT NUMBER: 139:87884
TITLE: Hollow inorganic membranes produced by metal or composite electrodeposition for solid oxide fuel cell applications
INVENTOR(S): Sarkar, Partho
PATENT ASSIGNEE(S): Alberta Research Council, Can.
SOURCE: U.S. Pat. Appl. Publ., 15 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 6
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| US 20030134176 | A1 | 20030717 | US 2002-53241 | 20020116 |
| US 6846588 | B2 | 20050125 | | |

| | | | | | |
|---|---|---|---|---|---|
| US 20030134169 | A1 | 20030717 | US 2002-78548 | 20020214 | |
| US 6824907 | B2 | 20041130 | | | |
| US 20030134170 | A1 | 20030717 | US 2002-156755 | 20020523 | |
| US 6936367 | B2 | 20050830 | | | |
| US 20030134171 | A1 | 20030717 | US 2002-207668 | 20020725 | |
| US 6893762 | B2 | 20050517 | | | |
| CA 2472778 | A1 | 20030731 | CA 2003-2472778 | 20030116 | |
| WO 2003062503 | A1 | 20030731 | WO 2003-CA59 | 20030116 | |
| W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW | | | | | |
| RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG | | | | | |
| EP 1466040 | A1 | 20041013 | EP 2003-731643 | 20030116 | |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK | | | | | |
| JP 2005515610 | T | 20050526 | JP 2003-562363 | 20030116 | |
| CN 1639391 | A | 20050713 | CN 2003-804586 | 20030116 | |
| US 20060051643 | A1 | 20060309 | US 2005-522235 | 20050809 | |
| PRIORITY APPLN. INFO.: | | | US 2002-53241 | A2 20020116 | |
| | | | US 2002-78548 | A2 20020214 | |
| | | | US 2002-156755 | A2 20020523 | |
| | | | US 2002-207668 | A1 20020725 | |
| | | | WO 2003-CA59 | W 20030116 | |
| | | | WO 2003-CA1118 | W 20030724 | |

AB This invention relates to a method of producing a hollow inorg. membrane that is particularly suitable for solid oxide fuel cell applications, as well as producing hollow inorg. composite laminated membranes having at least one such hollow inorg. membrane. The method comprises electrodepositing an inorg. material that includes at least some elec. conductive metal and some ionically conductive ceramic onto an elec. conductive combustible core, drying the core bearing the deposited inorg. material, then, sintering the core bearing the deposited inorg. material such that the core combusts, thereby producing a hollow inorg. membrane. The method may further comprise electrophoretically depositing a ceramic composition onto the hollow inorg. membrane, to produce an assembly of hollow inorg. composite laminated membranes.

REFERENCE COUNT: 68 THERE ARE 68 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 6 OF 9 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2003:401574 CAPLUS <<LOGINID::20080904>>

DOCUMENT NUMBER: 139:137219

TITLE: Electrodeposition of ceramics and ceramic composites for fuel cell applications

AUTHOR(S): Zhitomirsky, I.; Petric, A.

CORPORATE SOURCE: Department of Materials Science and Engineering, McMaster University, Hamilton, ON, L8S 4L7, Can.

SOURCE: Surface Engineering: Coatings and Heat Treatments, Proceedings of the 1st ASM International Surface Engineering Congress and the 13th International Federation for Heat Treatment and Surface Engineering Congress, Columbus, OH, United States, Oct. 7-10, 2002 (2003), Meeting Date 2002, 646-651. Editor(s): Popoola, Oludele O. ASM International: Materials

Park, Ohio.
CODEN: 69DYAM; ISBN: 0-87170-781-0
DOCUMENT TYPE: Conference
LANGUAGE: English
TI Electrodeposition of ceramics and ceramic composites for fuel cell applications
ACCESSION NUMBER: 2003:401574 CAPLUS <<LOGINID::20080904>>
DOCUMENT NUMBER: 139:137219
TITLE: Electrodeposition of ceramics and ceramic composites for fuel cell applications
AUTHOR(S): Zhitomirsky, I.; Petric, A.
CORPORATE SOURCE: Department of Materials Science and Engineering, McMaster University, Hamilton, ON, L8S 4L7, Can.
SOURCE: Surface Engineering: Coatings and Heat Treatments, Proceedings of the 1st ASM International Surface Engineering Congress and the 13th International Federation for Heat Treatment and Surface Engineering Congress, Columbus, OH, United States, Oct. 7-10, 2002 (2003), Meeting Date 2002, 646-651. Editor(s): Popoola, Oludele O. ASM International: Materials Park, Ohio.
CODEN: 69DYAM; ISBN: 0-87170-781-0
DOCUMENT TYPE: Conference
LANGUAGE: English
AB Cathodic electrodeposition techniques were developed and utilized for deposition of ceramic materials for application in solid oxide fuel cells (SOFCs). Ceramic coatings of ≤100 μm thickness were prepared by electrophoretic deposition (EPD) or electrolytic deposition (ELD). Advanced bath compns. were developed for EPD of electrode and electrolyte materials such as yttria stabilized zirconia (YSZ), Ce1-xGdxO2-y (CGO) La0.8Sr0.2Ga0.875Mg0.125O3-x (LSGM), La0.8Sr0.2Co0.2Fe0.8O3-x (LSCF) and (La0.8Sr0.2)0.98MnO3-.vdelta. (LSM). The use of the common solvent-dispersant-binder system enabled EPD of consecutive layers of different materials. Electrolytic deposition has been utilized for deposition of thin layers of YSZ, CGO, LaCrO3, CaMnO3 and CeO2 for possible applications as fuel cell electrolytes, high temperature protective coatings or barrier layers for prevention of electrode/electrolyte degradation
REFERENCE COUNT: 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 7 OF 9 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2001:930771 CAPLUS <<LOGINID::20080904>>
DOCUMENT NUMBER: 136:21931
TITLE: Composite bipolar plate separator structures for polymer electrolyte membrane (PEM) electrochemical and fuel cells
INVENTOR(S): Davis, Herbert John
PATENT ASSIGNEE(S): Bondface Technology Inc., Can.; Avantcell Technologies Inc.
SOURCE: Brit. UK Pat. Appl., 14 pp.
CODEN: BAXXDU
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| GB 2359186 | A | 20010815 | GB 2000-2865 | 20000208 |

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     CA 2334444          A1    20010808    CA 2001-2334444        20010207
     US 20020001743      A1    20020103    US 2001-778002         20010207
PRIORITY APPLN. INFO.:                     GB 2000-2865        A  20000208
TI   Composite bipolar plate separator structures for polymer
     electrolyte membrane (PEM) electrochemical and fuel
     cells
ACCESSION NUMBER:        2001:930771  CAPLUS <<LOGINID::20080904>>
DOCUMENT NUMBER:         136:21931
TITLE:                   Composite bipolar plate separator structures
                         for polymer electrolyte membrane (PEM) electrochemical
                         and fuel cells
INVENTOR(S):             Davis, Herbert John
PATENT ASSIGNEE(S):      Bondface Technology Inc., Can.; Avantcell Technologies
                         Inc.
SOURCE:                  Brit. UK Pat. Appl., 14 pp.
                         CODEN: BAXXDU
DOCUMENT TYPE:           Patent
LANGUAGE:                English
FAMILY ACC. NUM. COUNT:  1
PATENT INFORMATION:

     PATENT NO.          KIND   DATE        APPLICATION NO.        DATE
     ----------          ----   --------    -------------------    --------
     GB 2359186           A     20010815    GB 2000-2865           20000208
     CA 2334444           A1    20010808    CA 2001-2334444        20010207
     US 20020001743       A1    20020103    US 2001-778002         20010207
PRIORITY APPLN. INFO.:                     GB 2000-2865        A  20000208
AB   A bipolar separator plate for electrochem. cells comprises a core layer of
     a metal having high elec. and thermal conductivity and has oppositely facing
     surfaces and cladding layers mech. bonded to each of the oppositely facing
     surfaces, each cladding layer comprising an elec. conducting polymer
     resistant to the electrochem. and environmental conditions to which it
     will be exposed in the cell and effective to protect the core layer from
     such conditions.  The cladding layers allow the separator plate to be used
     for extended periods of time in electrochem. cells and, in particular, in
     fuel cells of the PEM type.

L5   ANSWER 8 OF 9  CAPLUS  COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER:        2001:523566  CAPLUS <<LOGINID::20080904>>
DOCUMENT NUMBER:         135:95179
TITLE:                   Production of a polymer electrolyte membrane electrode
                         assembly for fuel cells
INVENTOR(S):             Biegert, Hubertus; Britz, Peter; Toth, Gabor
PATENT ASSIGNEE(S):      DaimlerChrysler A.-G., Germany
SOURCE:                  Ger. Offen., 6 pp.
                         CODEN: GWXXBX
DOCUMENT TYPE:           Patent
LANGUAGE:                German
FAMILY ACC. NUM. COUNT:  1
PATENT INFORMATION:

     PATENT NO.          KIND   DATE        APPLICATION NO.        DATE
     ----------          ----   --------    -------------------    --------
     DE 19962941          A1    20010719    DE 1999-19962941       19991224
PRIORITY APPLN. INFO.:                     DE 1999-19962941       19991224
TI   Production of a polymer electrolyte membrane electrode assembly for
     fuel cells
ACCESSION NUMBER:        2001:523566  CAPLUS <<LOGINID::20080904>>
DOCUMENT NUMBER:         135:95179
TITLE:                   Production of a polymer electrolyte membrane electrode
                         assembly for fuel cells
```

INVENTOR(S): Biegert, Hubertus; Britz, Peter; Toth, Gabor
PATENT ASSIGNEE(S): DaimlerChrysler A.-G., Germany
SOURCE: Ger. Offen., 6 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| DE 19962941 | A1 | 20010719 | DE 1999-19962941 | 19991224 |
| PRIORITY APPLN. INFO.: | | | DE 1999-19962941 | 19991224 |

AB A polymer electrolyte membrane electrode assembly (MEA) consists of 2 units of coated electrodes, covered by electro-deposited catalytic material, and ion-conductive polymer membranes, which are joined together. In a 1st step the surface of the electrode substrate is coated with a C-containing, porous, unflexible, or flexible film, paper, fabric, felt, fleece, and/or powdered substrates. The ion-conductive polymer membrane consists of Nafion and tetraethoxysilane 1-10 weight% as alkoxide, which is hydrolized and then condensed according sol-gel-process to give an applicable membrane. The 5-15 μm thick membrane is placed, but not fixed on the electrode coating, then a catalyst-containing zone is deposited between the polymer membrane and the electrode. The electrode-membrane units are joined together by hot-pressing, or adhering to form the MEA and fix the membranes. The polymer electrolyte membrane electrode assembly is suitable for fuel cells.

L5 ANSWER 9 OF 9 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1996:527046 CAPLUS <<LOGINID::20080904>>
DOCUMENT NUMBER: 125:252892
ORIGINAL REFERENCE NO.: 125:47166h,47167a
TITLE: Development of electrophoretic coating for the manufacturing of thin electrolyte layers
AUTHOR(S): Hruschka, Martin
CORPORATE SOURCE: Inst. Werkstoffe Energietech., Forschungszent. Juelich G.m.b.H. Juelich, DE, D-52425, USA
SOURCE: Berichte des Forschungszentrums Juelich (1996), Juel-3221, 1-137 pp.
CODEN: FJBEE5; ISSN: 0366-0885
DOCUMENT TYPE: Report
LANGUAGE: German
TI Development of electrophoretic coating for the manufacturing of thin electrolyte layers
ACCESSION NUMBER: 1996:527046 CAPLUS <<LOGINID::20080904>>
DOCUMENT NUMBER: 125:252892
ORIGINAL REFERENCE NO.: 125:47166h,47167a
TITLE: Development of electrophoretic coating for the manufacturing of thin electrolyte layers
AUTHOR(S): Hruschka, Martin
CORPORATE SOURCE: Inst. Werkstoffe Energietech., Forschungszent. Juelich G.m.b.H. Juelich, DE, D-52425, USA
SOURCE: Berichte des Forschungszentrums Juelich (1996), Juel-3221, 1-137 pp.
CODEN: FJBEE5; ISSN: 0366-0885
DOCUMENT TYPE: Report
LANGUAGE: German
AB Process steps for the manufacture of thin gas-tight electrolyte layers for solid oxide fuel cells (SOFC) include precipitation of electrolyte powder and the generation of a homogeneous field to avoid defective substrate surfaces during coating. Requirements for surface

structure, pore size distribution, porosity, microstructure, elec. conductivity,
and shrinkage behavior of anode substrates were studied, and possibilities of adaptation and optimization are proposed. Final sintering of layered substrate composite was effected by cofiring, resulting in planar composites with gastight electrolyte layers. Possibilities and limits in the application of the new electrophoretic coating are discussed.

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| COST IN U.S. DOLLARS | SINCE FILE ENTRY | TOTAL SESSION |
|---|---|---|
| FULL ESTIMATED COST | 169.15 | 169.36 |
| DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS) | SINCE FILE ENTRY | TOTAL SESSION |
| CA SUBSCRIBER PRICE | -36.00 | -36.00 |

SESSION WILL BE HELD FOR 120 MINUTES
STN INTERNATIONAL SESSION SUSPENDED AT 14:56:52 ON 04 SEP 2008